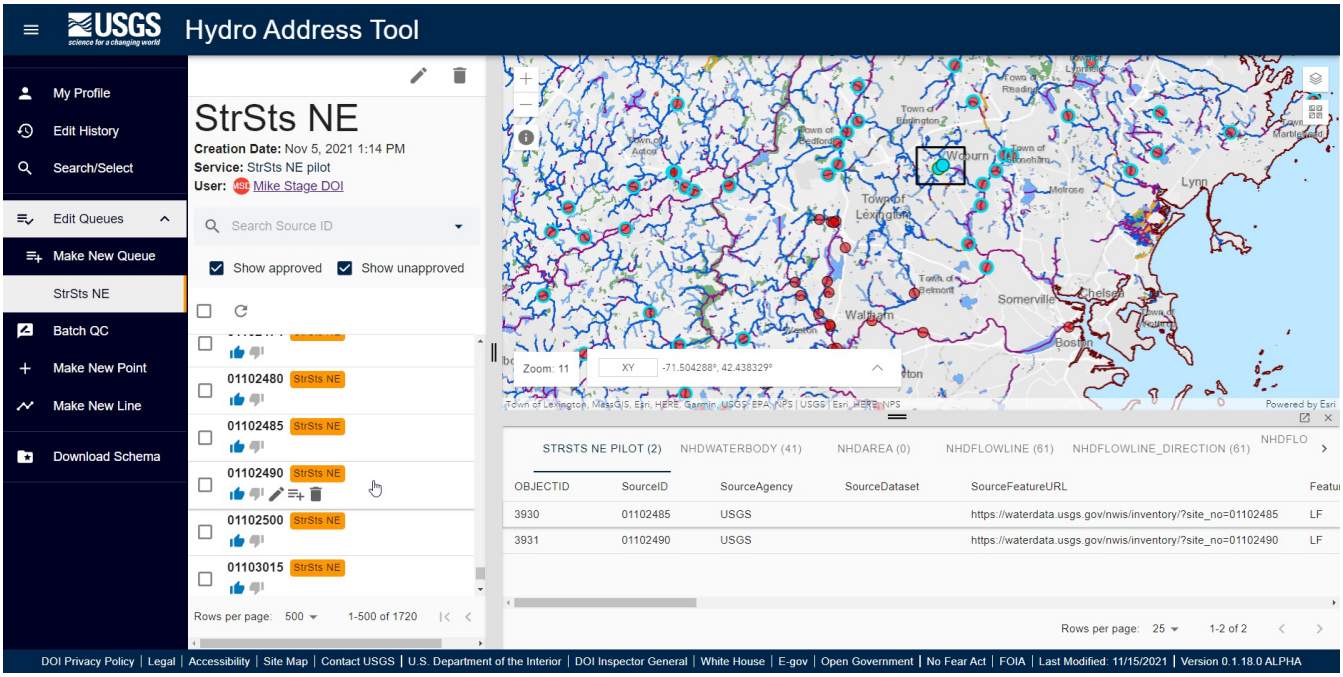
Hydrography Addressing Tool User Guide

https://hydromaintenance.nationalmap.gov/hydro-add

hydroadd@usgs.gov



Introduction

The Hydrography Addressing Tool, or HydroAdd, is a web tool built by the USGS National Geospatial Program (NGP). HydroAdd allows you to address your own data to the High Resolution (1:24,000-scale) National Hydrography Dataset (NHD). Because HydroAdd is web-based tool, multiple users can collaborate on shared projects.

HydroAdd allows you to address (or reference, or index) point, line, or polygon features to be coincident with NHD features. Data addressed to the NHD has a network address—a location on the NHD flowline network which consists of a ReachCode and measure. When you address your data to the NHD, you are snapping your data to be coincident to the NHD, while also adding the network address to your data table.

Any kind of hydro observation can be addressed to the NHD with HydroAdd. For example, you can address the locations of dams or steam gages on NHD streams. Or you can address fish sampling sites, point source pollution, or monitoring stations on springs or wells. You can address stretches of river too, for example wild and scenic rivers, best stretches of river for recreational rafting, or dye traces in a karst landscape. You can address polygons as well, such as algal blooms on reservoirs, or hyacinth overgrowth on reservoirs.

NOTE: You cannot edit the NHD with HydroAdd—it is displayed only as a reference layer.

Prerequisites for using HydroAdd

To use HydroAdd:

- You must have an active ArcGIS Online account. Share web layers from AGOL to edit with HydroAdd.
- Your data must be in the HydroAdd schema.

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Login

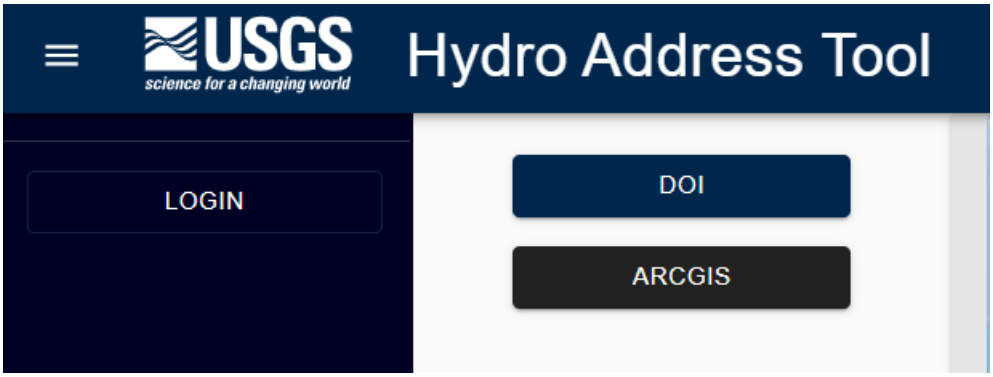
There are two ways to login to HydroAdd. HydroAdd currently accepts login credentials from:

- ArcGIS Online
- Department of Interior

If you are a DOI employee, both login methods are available to you. This means you can have two independent logins—one associated with your AGOL account, and the other associated with your DOI account. HydroAdd considers these independent accounts with different user profiles. Each account can have different web service layers.

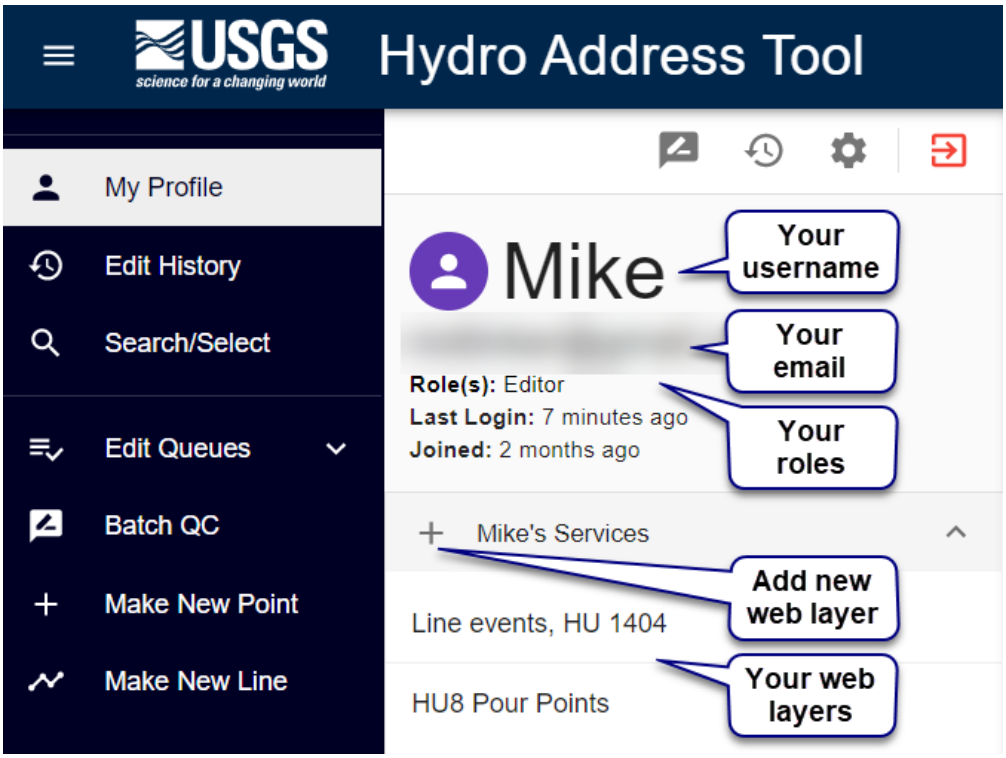
Learn more about this in My Profile.

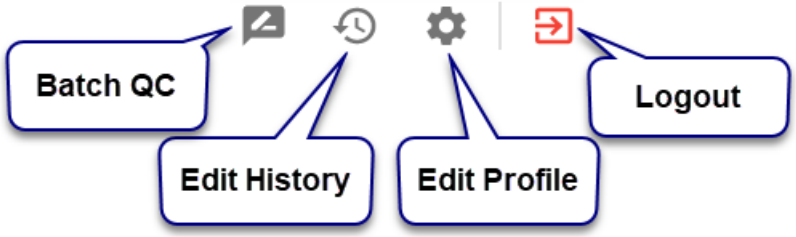
In any case, you must have a AGOL account to use HydroAdd. This is because HydroAdd requires you to share your data as a web feature service from AGOL. If you do not have an ArcGIS Online account, contact your IT department or ArcGIS Online administrator to create an account for you. Or follow this link and create a personal ArcGIS online account.



My Profile

When you login to HydroAdd, the landing page is My Profile. Your profile shows your username, email, role, and the web layers you have added to HydroAdd.





Your username

Your username is unique to HydroAdd tool. Your username is not used to log into the HydroAdd Tool—it's only associated with your HydroAdd user profile.

Your email

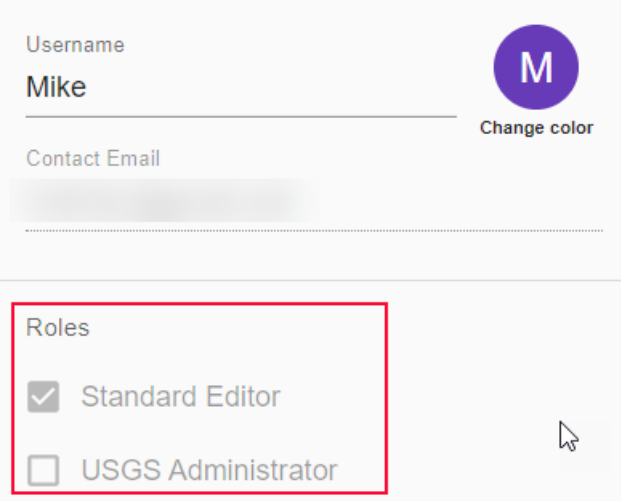
The email associated with your profile is the email associated with your login. For example, if you login with AGOL, your profile shows your AGOL email. If you login via DOI, your profile shows your DOI email.

It is possible to have two logins for HydroAdd, one associated with your AGOL account, and the other associated with your DOI account. HydroAdd considers these independent accounts with different user profiles. Each account can have different web service layers.

Learn about Login.

Your roles

HydroAdd has two roles, Editors and Administrators. You cannot change your role type; it is set by the HydroAdd USGS Administrator

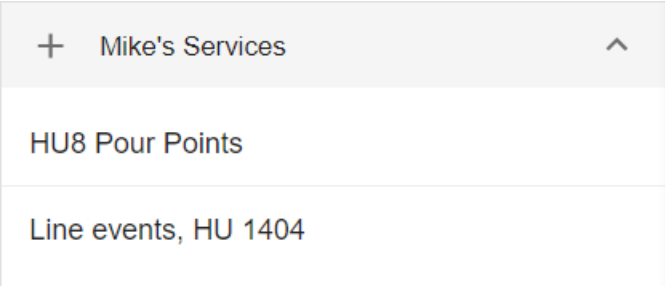


Your services

Your web feature services, also known as web layer or services, are listed here.

Use the + button to add new web layers.

Learn more about web layers.



Batch QC

Goes to Batch QC function. Learn about Batch QC.

Edit History

Goes to your edit History.

Logout

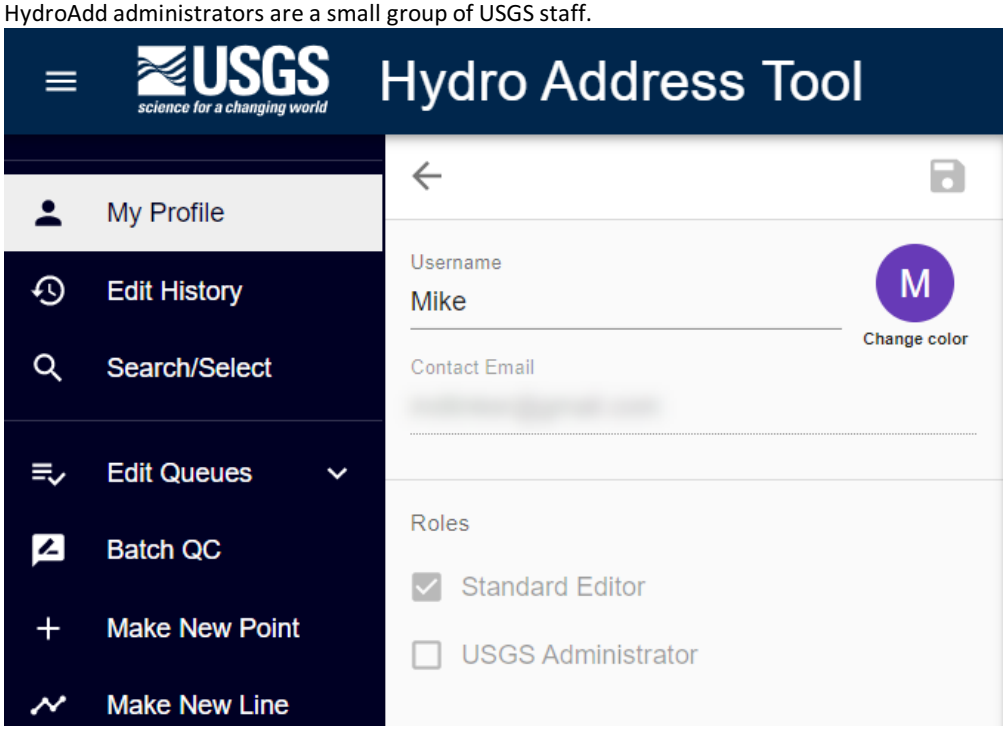
Click to logout of HydroAdd.

Edit Profile

To update you profile, click Edit Profile .

- Choose an appropriate username that does not compromise your privacy.
  - Do not use any Personally Identifying Information (PII) for your username.
  - PII includes your personal, business email, address, phone number.
- Select a color.

- You can change your username and color any time.
- Only HydroAdd administrators can see your profile.
    - This allows HydroAdd administrators to contact you for troubleshooting and help.
    - HydroAdd administrators are a small group of USGS staff.



Prepare your Data for the HydroAdd Tool

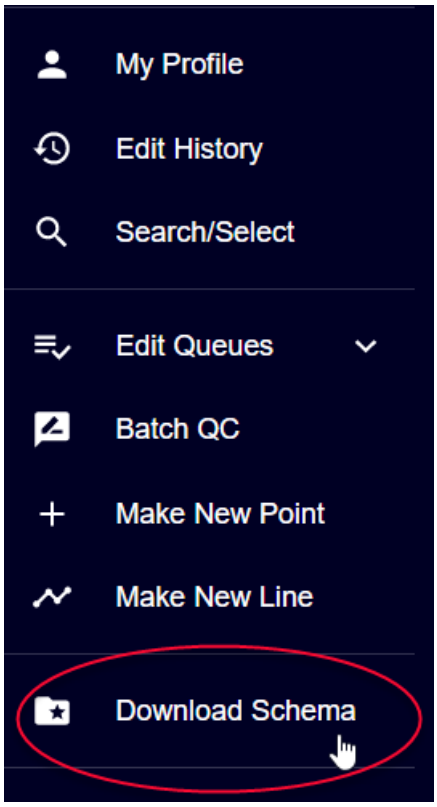
To edit your data with HydroAdd, there are three steps.

1 Put your data into the HydroAdd schema.
2 Publish your data as a web layer at ArcGIS Online with ArcGIS Pro.
3 Add the web layer to HydroAdd tool.

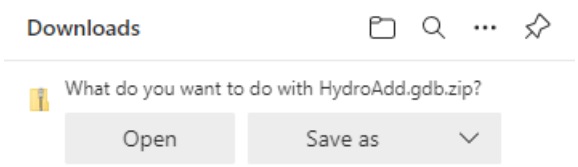
Step 1: Put your data into the HydroAdd schema

To edit your data with HydroAdd, it must in the HydroAdd schema.

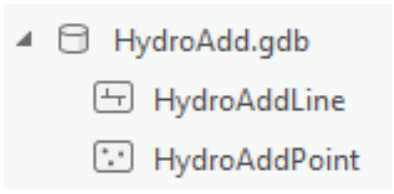
1 Download the HydroAdd empty schema from the HydroAdd tool.



2 Save the zip file; unzip it.



3 The file is an Esri geodatabase. It contains two empty feature classes in the Web Mercator projection: HydroAddLine and HydroAddPoint. The HydroAddPolygon feature class will be added soon.

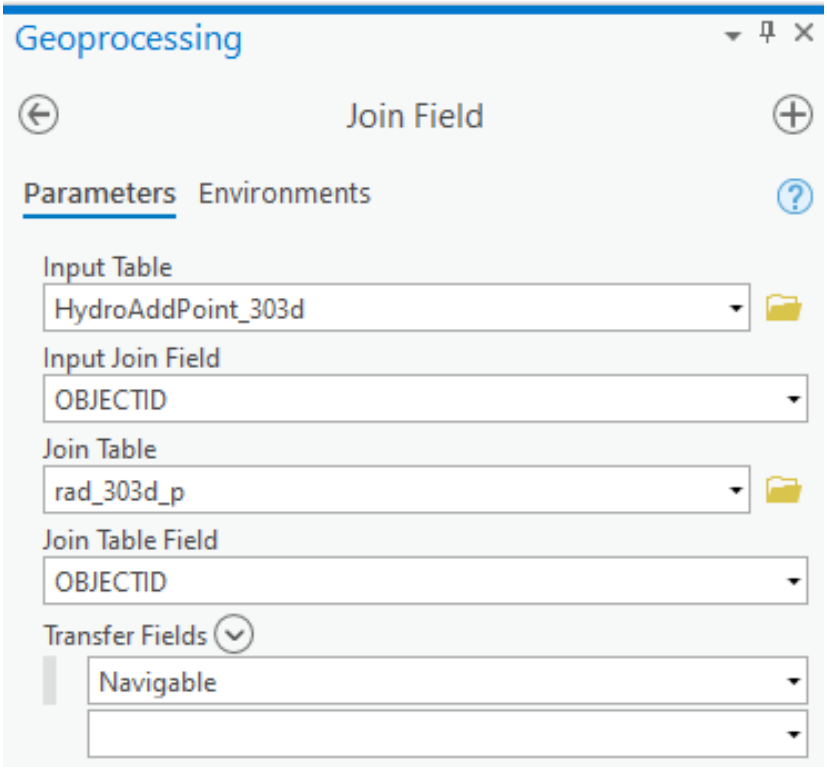


4 NOTE: Web Mercator (WKID 3857) is the recommended projection for HydroAdd service layers.
  a NAD83 is also acceptable, although you would need to reproject downloaded HydroAdd feature classes.
  b If other projections are used, Editing and Batch QC may break or behave unpredictably.
  c Learn about projecting between Web Mercator and NAD83.
5 See HydroAdd Data Schema for field descriptions.
6 Add any fields you need to the HydroAdd schema.

a HydroAdd is indifferent to any additional fields you add to the core schema. You can add as many fields as you want. However, do not remove any of the core HydroAdd fields. This will break editing.

b Use the Join Field tool to add fields to the HydroAdd schema. You can add single or multiple fields with the Join Field tool. Use OBJECTID as the join field.

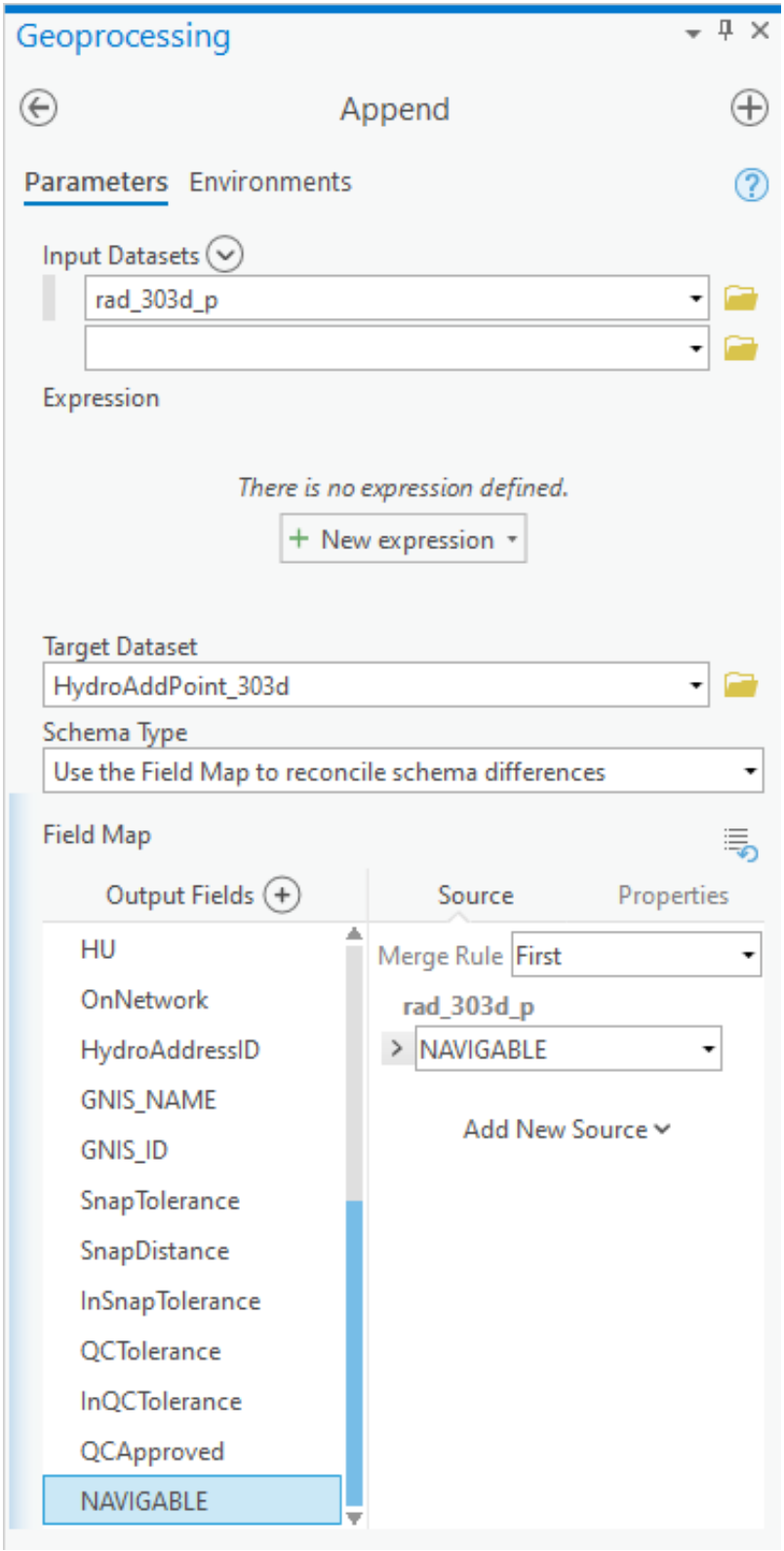
c See Join Field (Data Management)—ArcGIS Pro | Documentation to learn more.



7 Append your data to the empty schema with the Append tool.

a Set “Schema Type” to “Use the Field Map to reconcile schema differences.”

b See Append (Data Management)—ArcGIS Pro | Documentation to learn more.



Step 2: Publish your data as a web layer at ArcGIS Online from ArcGIS Pro

To edit your data with HydroAdd, you must publish it as a web layer at ArcGIS Online (AGOL). Follow the instructions here to publish your data as a web layer in ArcGIS Online. See Introduction to sharing web layers—ArcGIS Pro | Documentation to learn more about web layers.

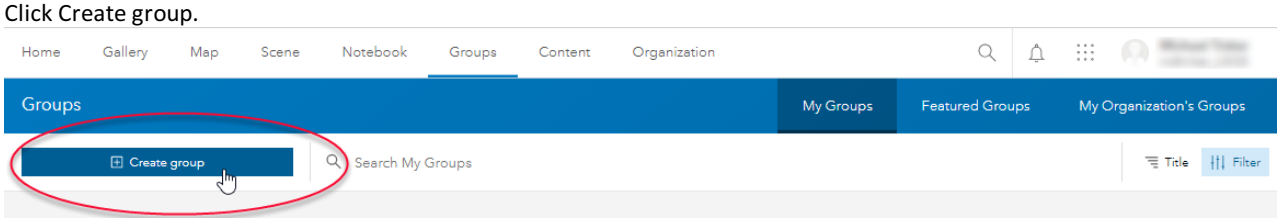
Create an AGOL Group

Your web layer must reside in an AGOL Group. Groups are where you control group membership, data visibility, and editing rights.

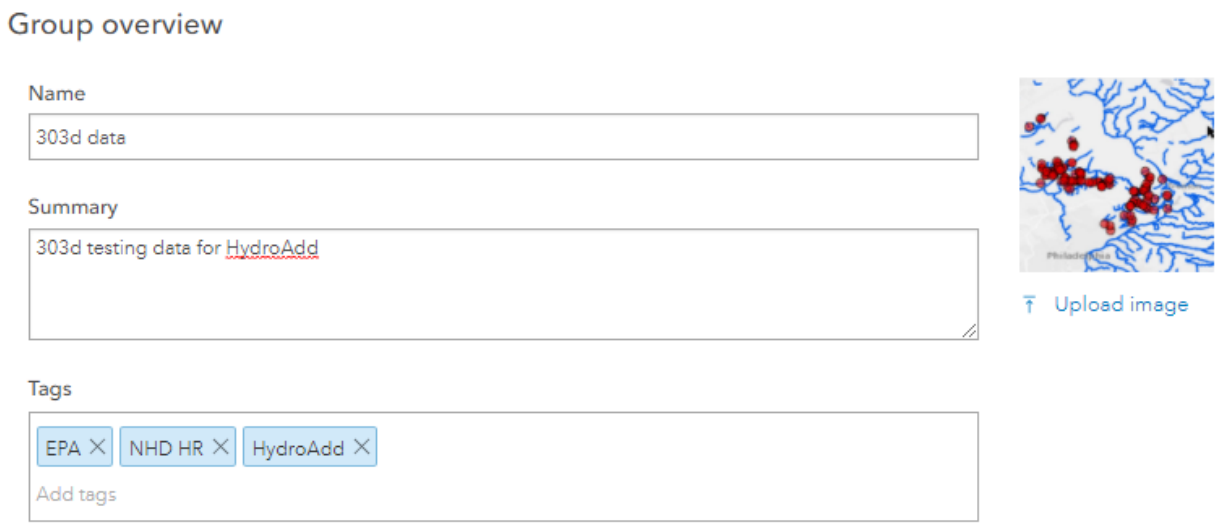
HydroAdd honors these settings to protect your data.

1 At your AGOL account, go to Groups.

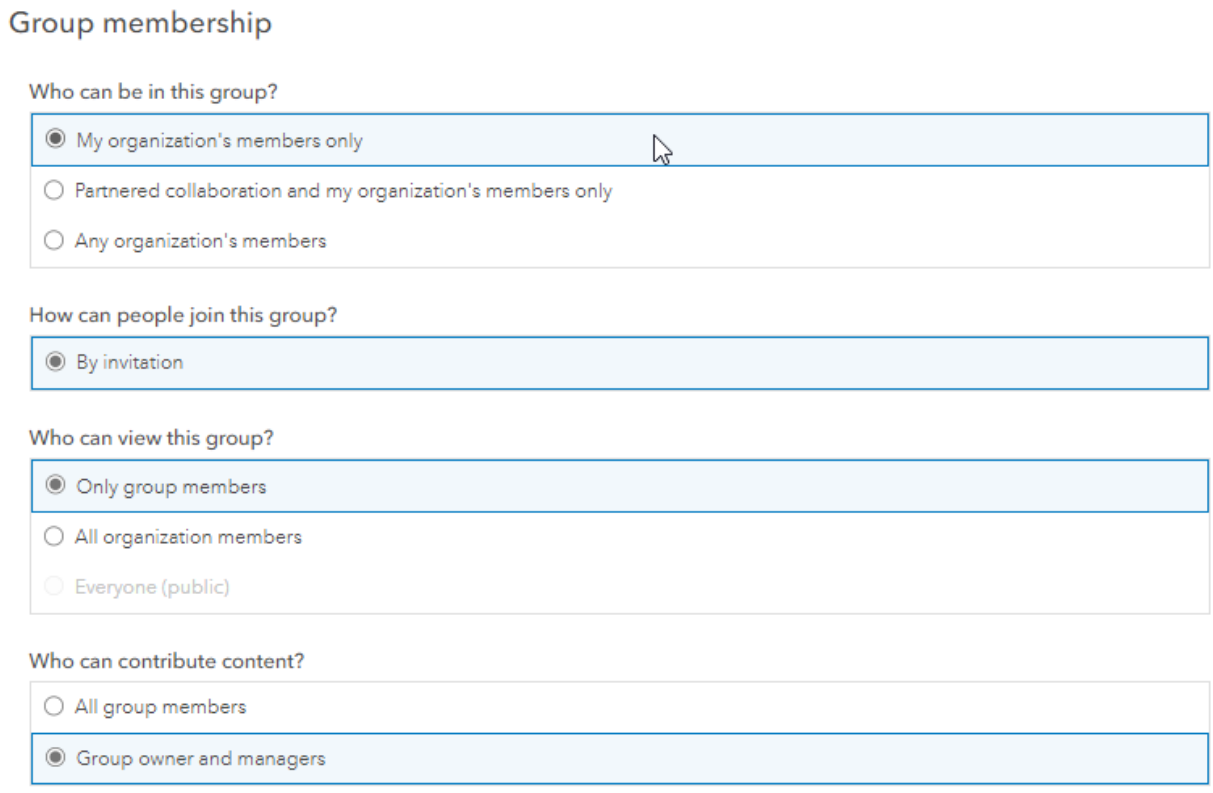
2 Click Create group.



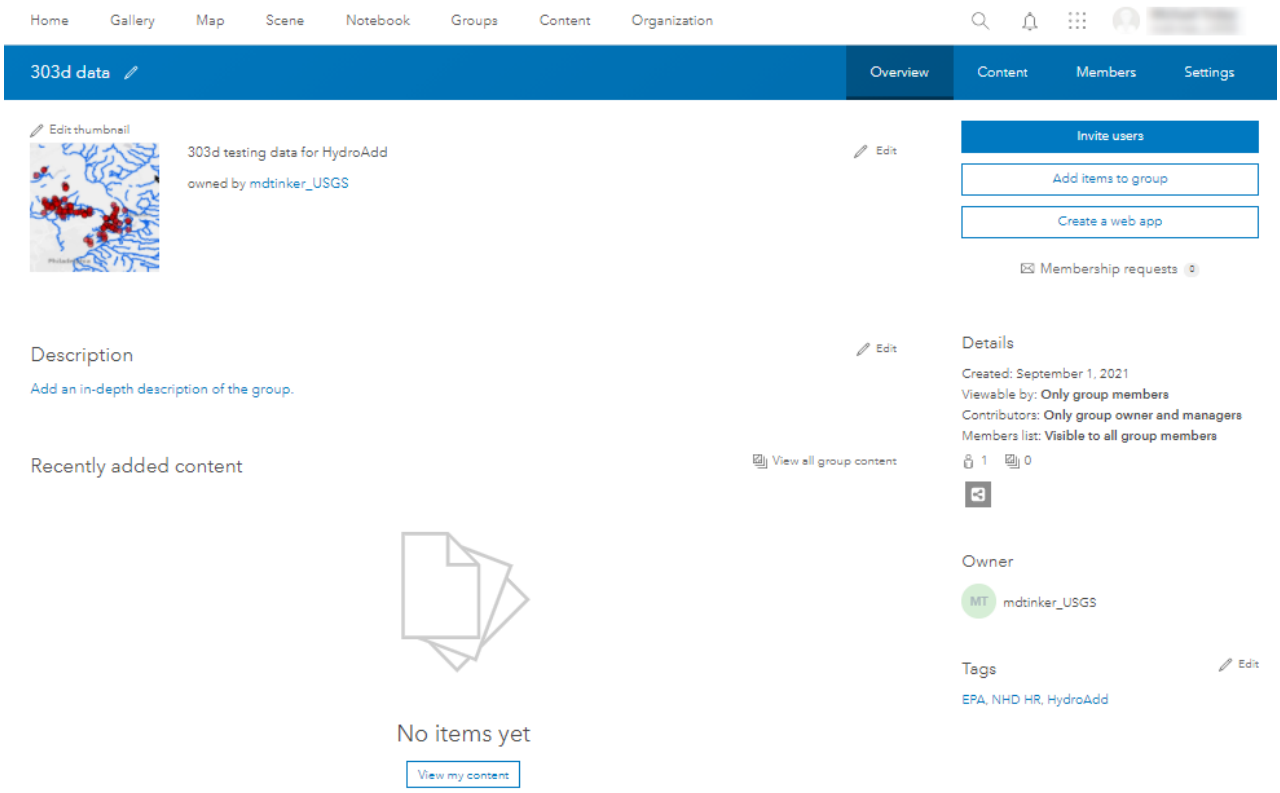
3 Enter the Group overview information.



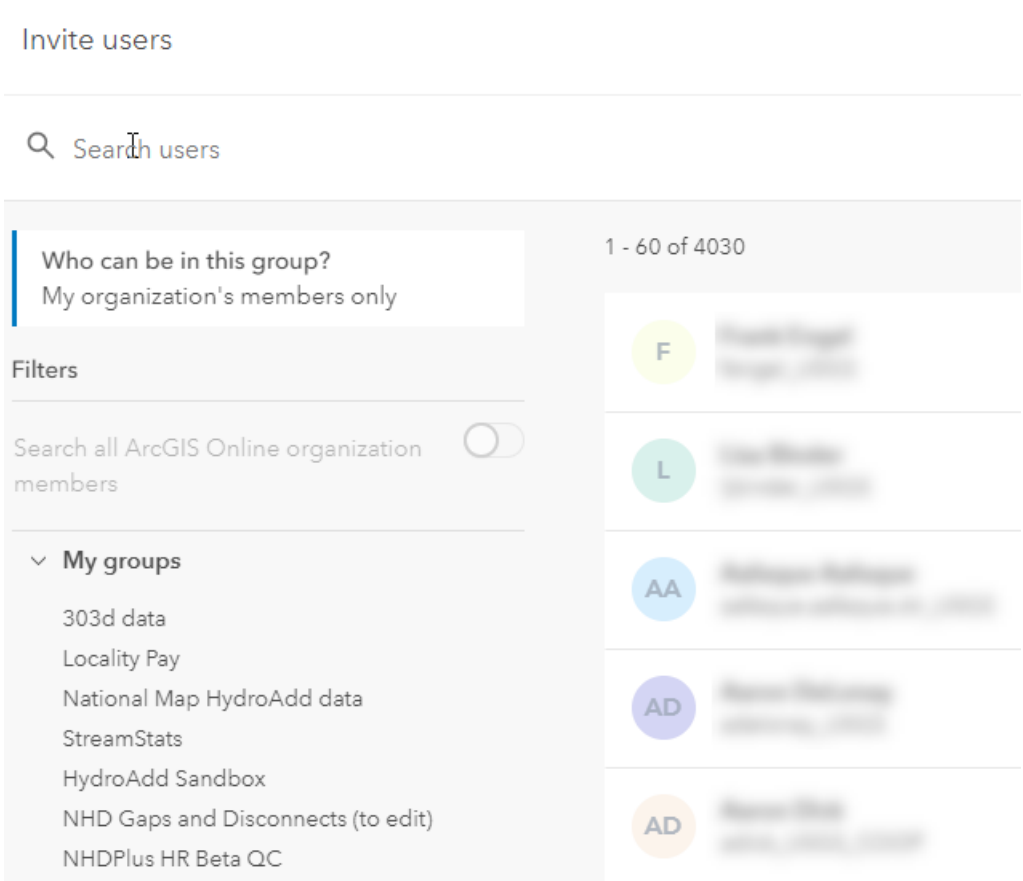
4 Enter Group membership information.
These settings control group membership, group visibility, and who can contribute content. Choose membership settings that are appropriate for your group.



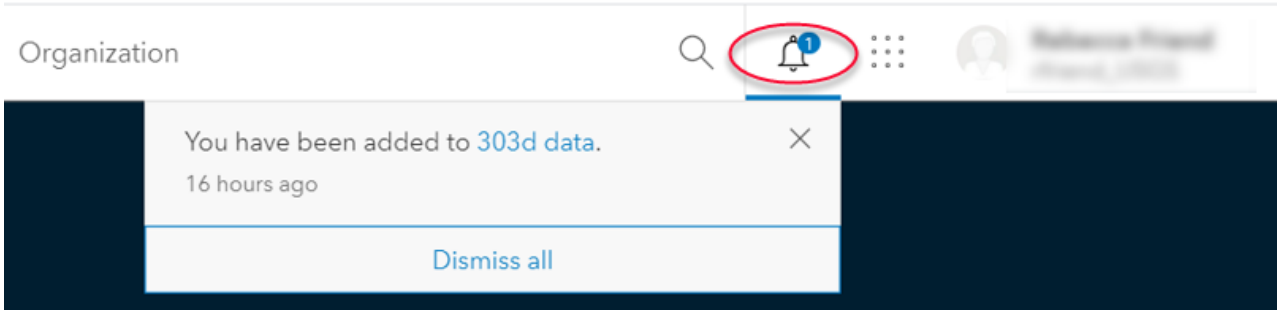
5 Save settings. The group is created.



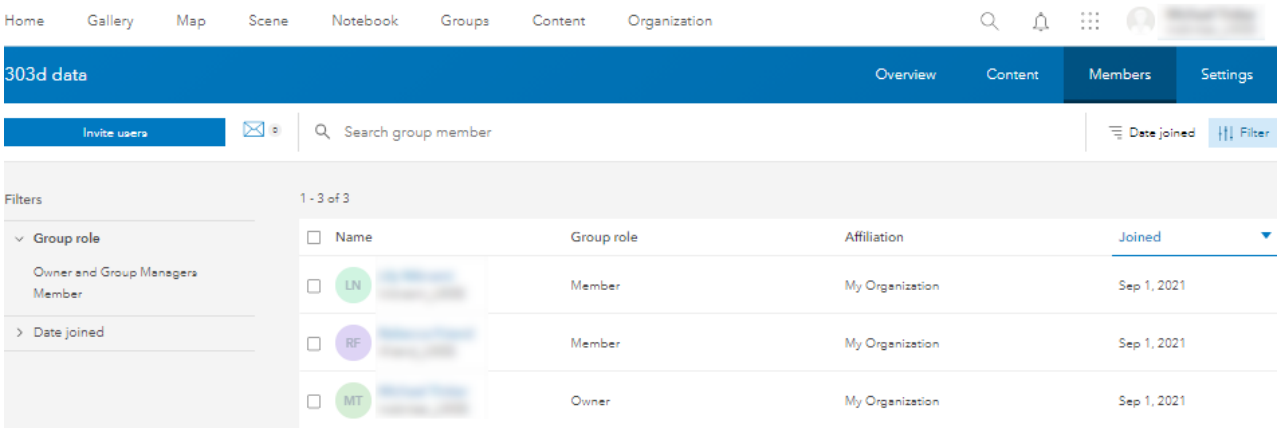
6 Add users to the group.



7 Users who are added to a group get a notice in AGOL.



8 Click Members to see all members included in the group.



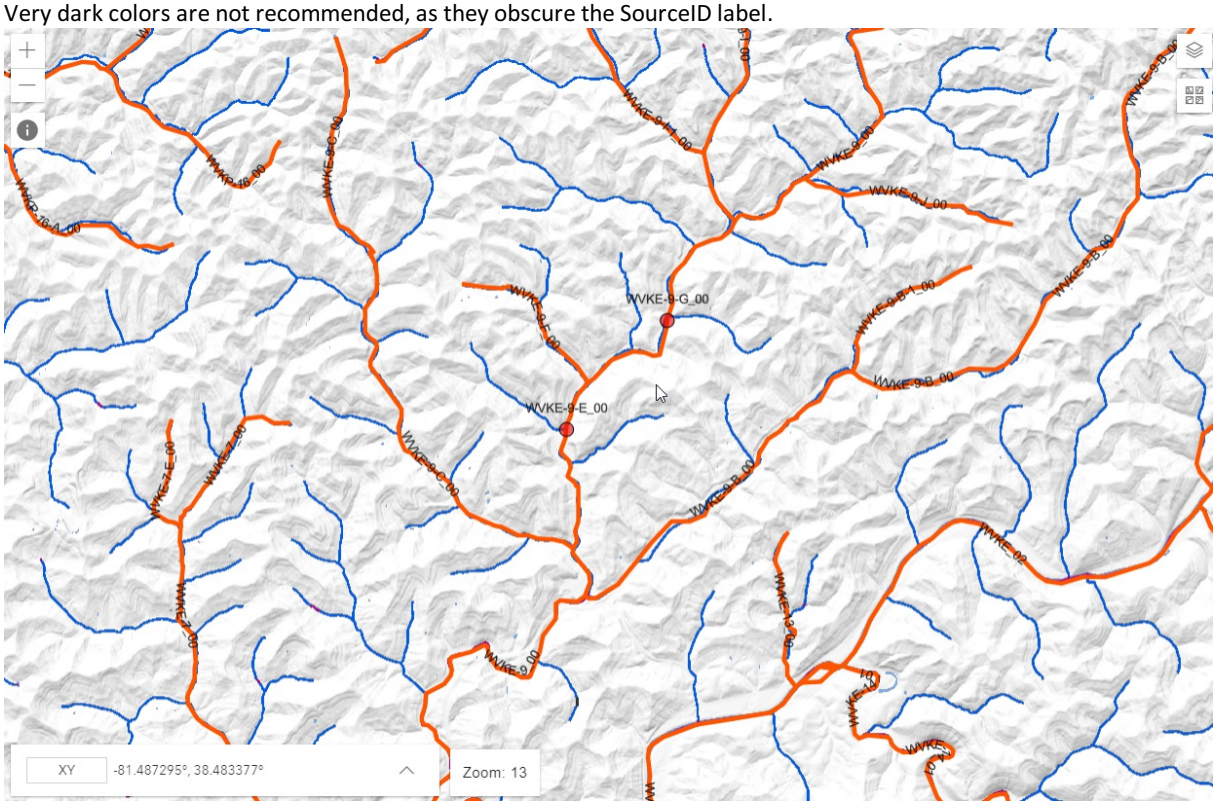
Add data to the group

Once you have created a group in AGOL and added members, you can add content to the group.

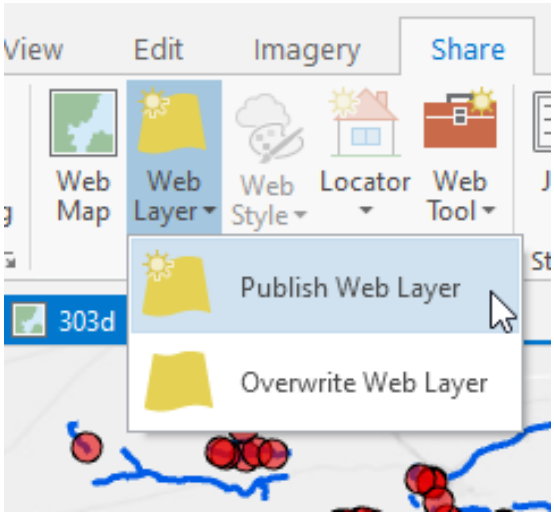
1 Prepare a map in ArcGIS Pro. Set the symbology and order the layers as you want to see them in AGOL.

a For point symbology, we recommend about 10-point dots with bright colors. Transparency is also helpful, about 40%, as it allows you to see the map and flowlines through the point feature.

b For line symbology, we recommend about 3-point lines with bright colors that stand out against the NHD flowlines. Very dark colors are not recommended, as they obscure the SourceID label.

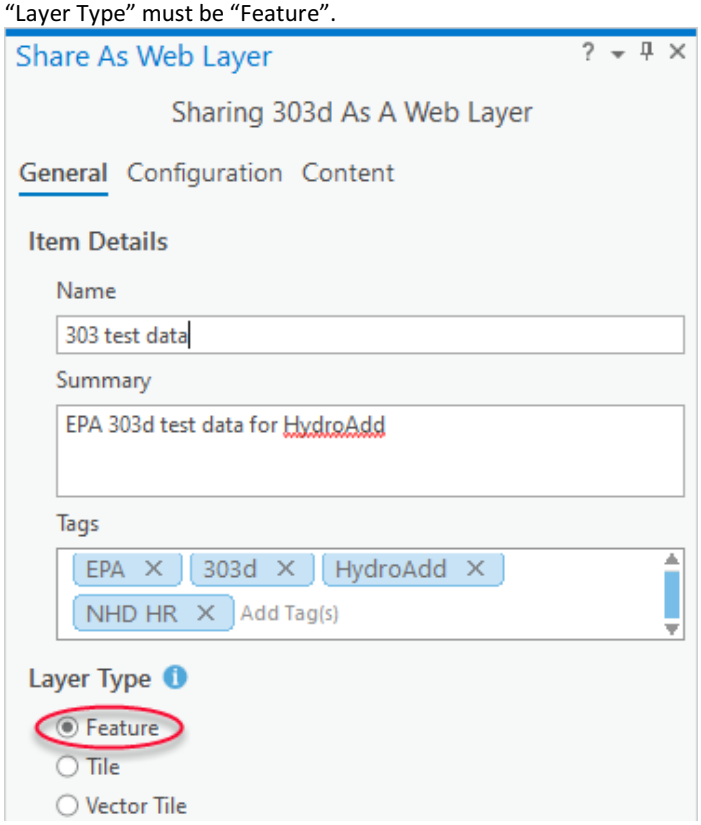


2 When your map is ready, publish it as a web layer.

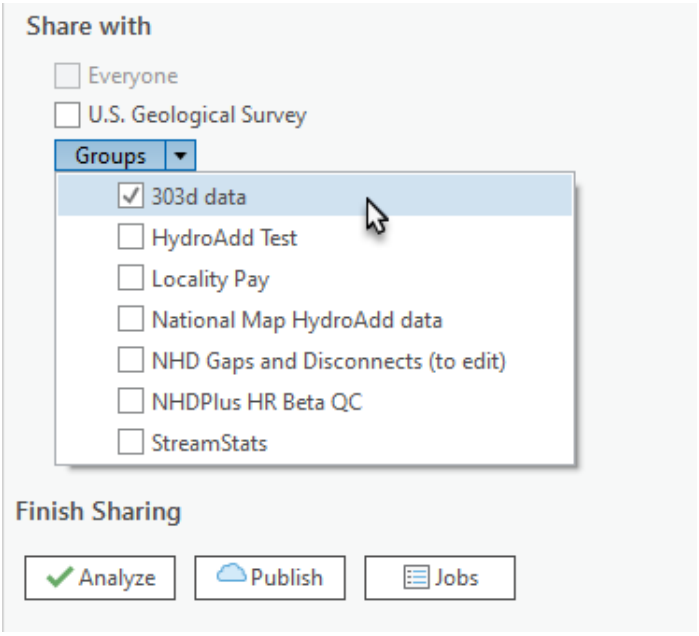


3 Enter information appropriate to your web layer, including Name, Summary, and Tags.

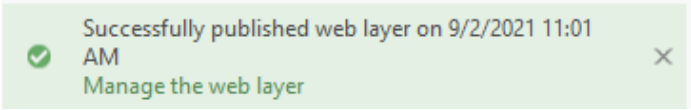
4 “Layer Type” must be “Feature”.



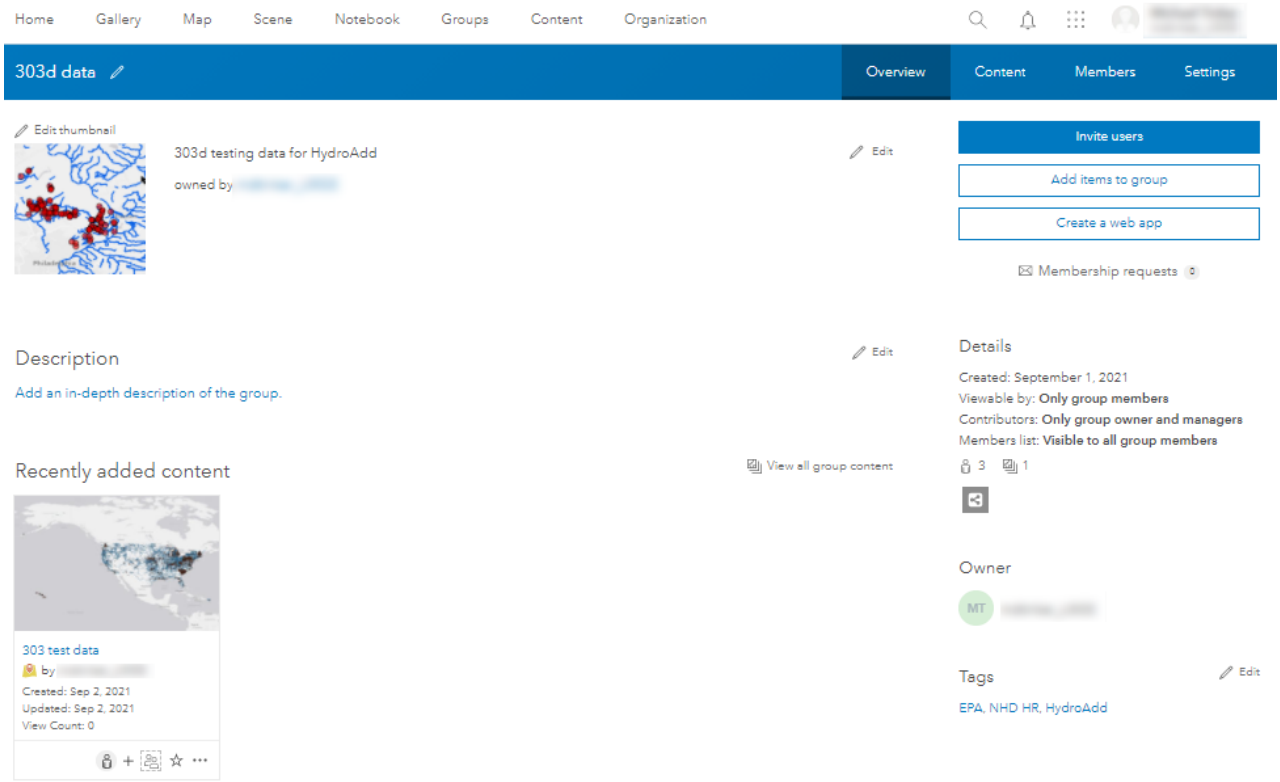
5 Add the web layer to the appropriate group.



6 ArcGIS Pro notification of successful publication.



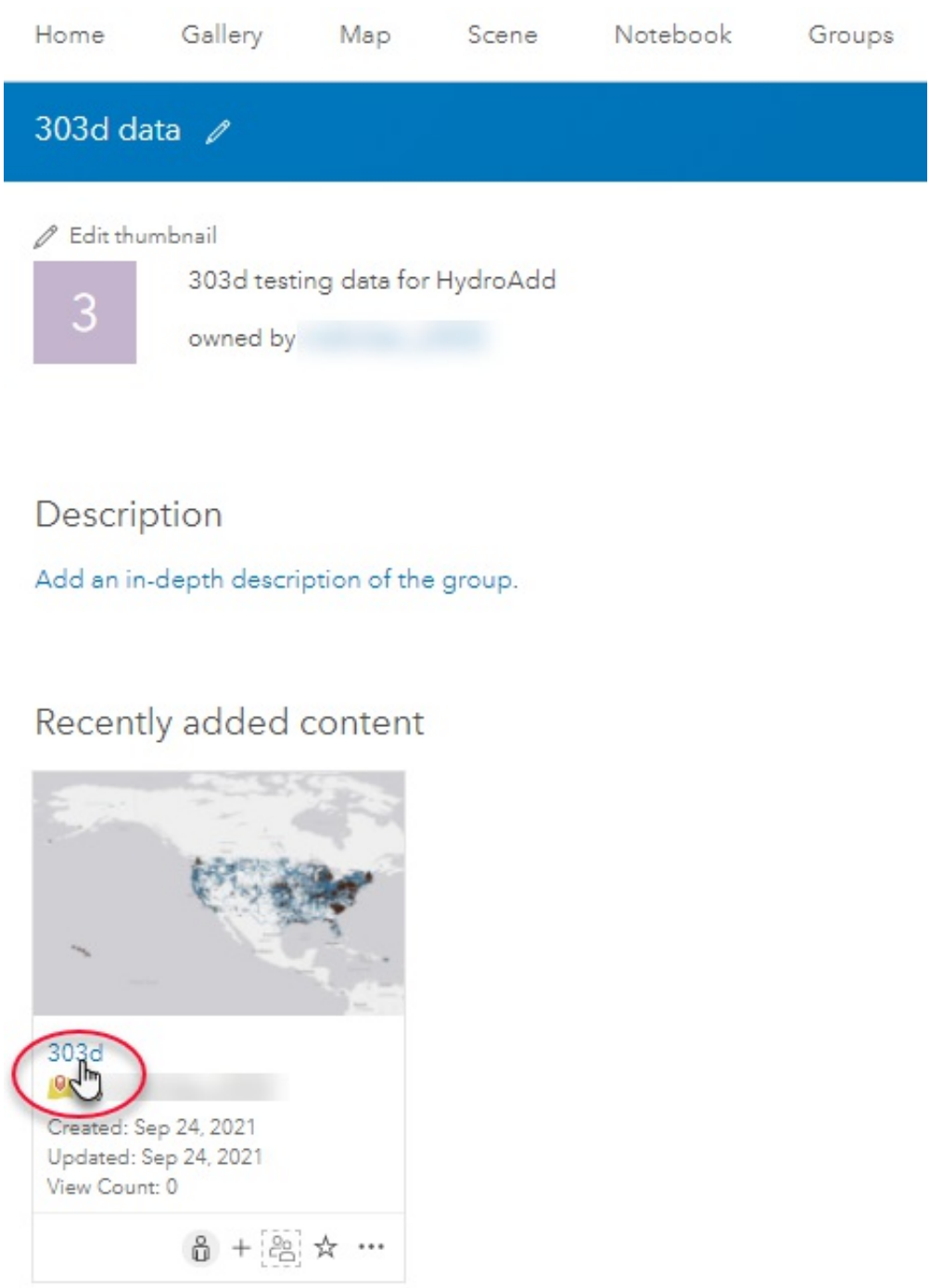
7 At AGOL, confirm your map is added to the group.
You can add as many maps to a group as you wish.



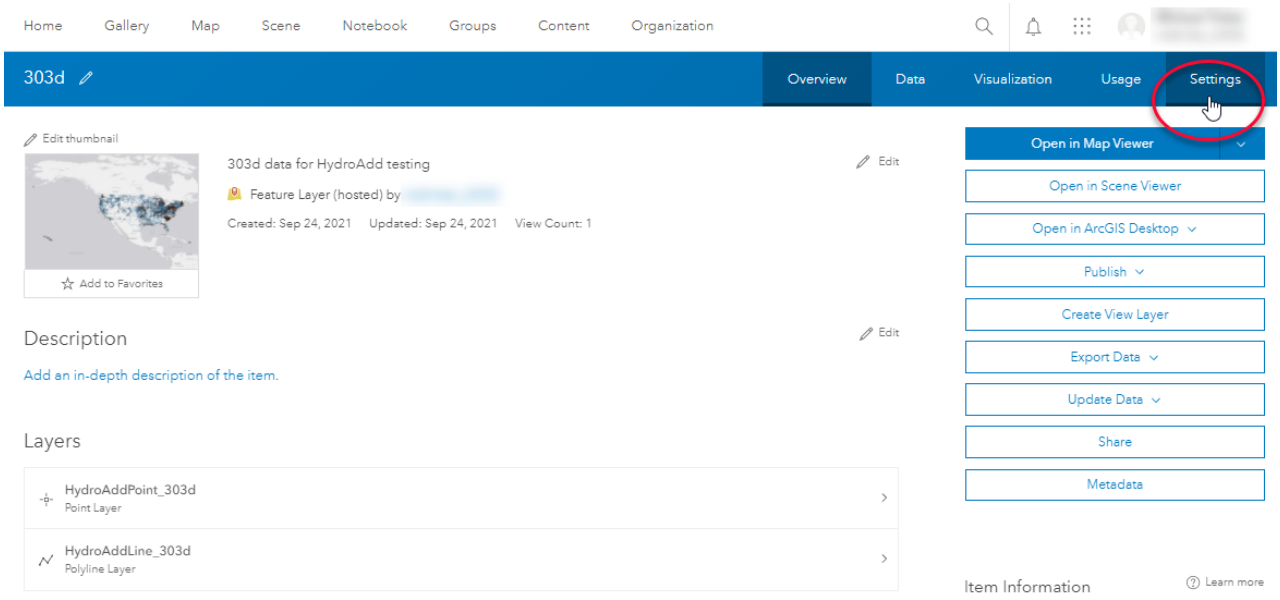
8 Click the name of the map to see the overview

Enable editing of the service layer

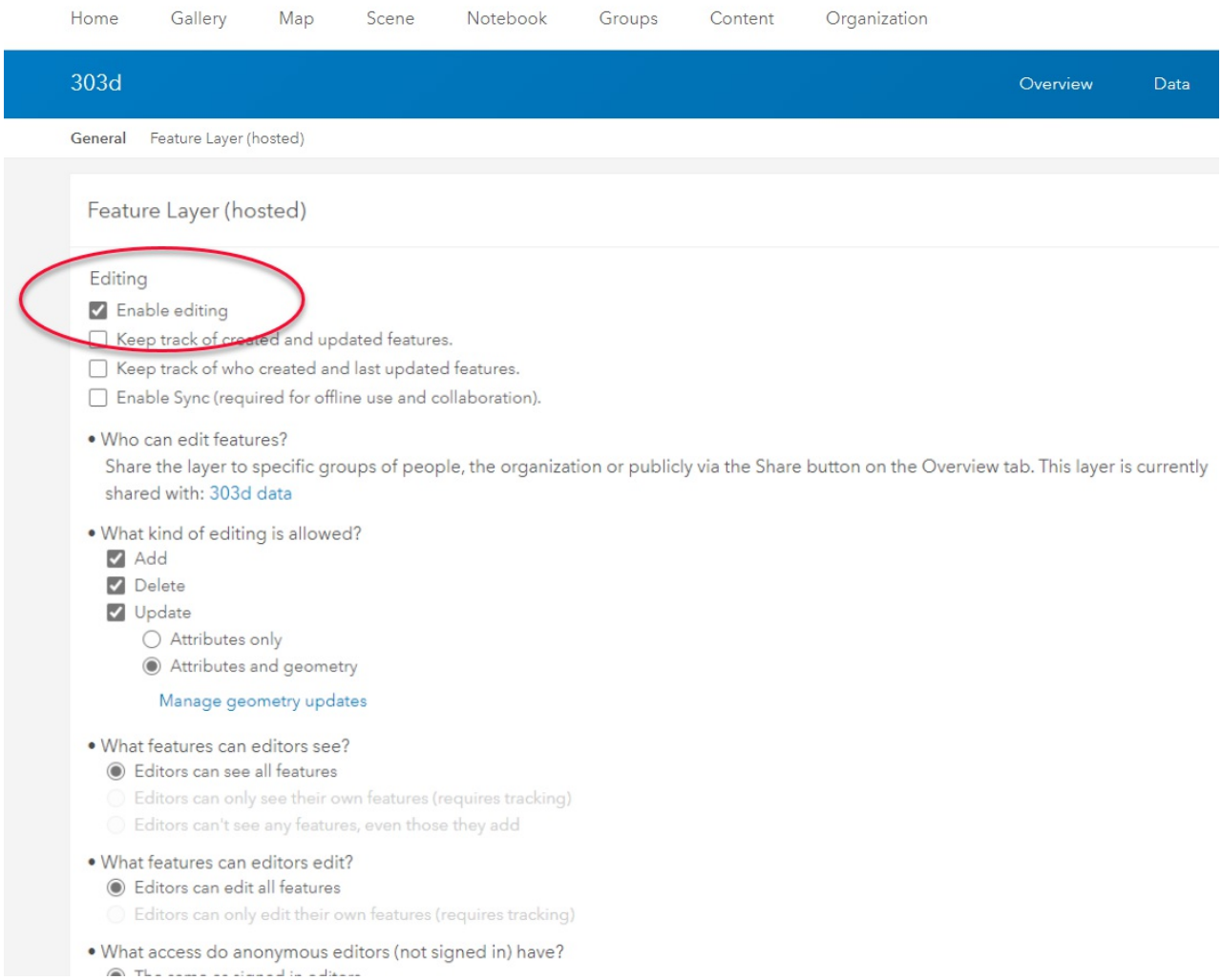
1 From overview, click the name of the map.



2 From the item page, click Settings.

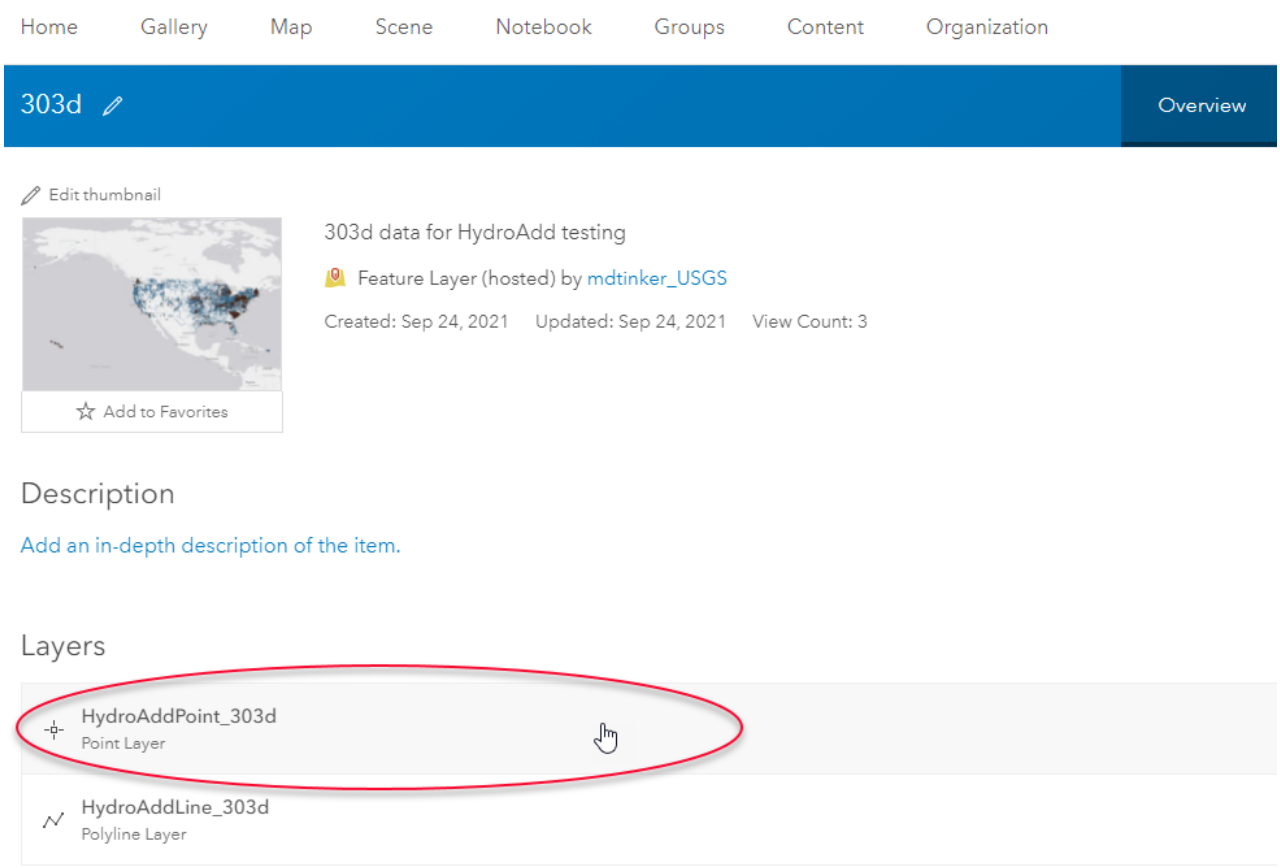


3 From the item settings page, click Enable editing.

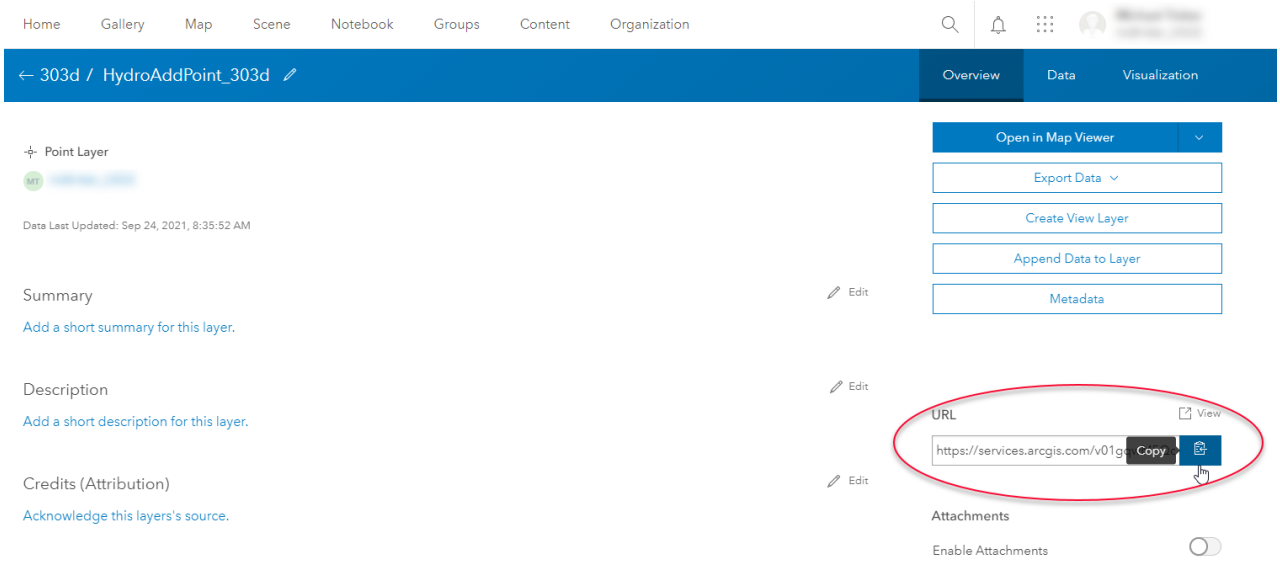


Step 3: Add the web layer to HydroAdd tool

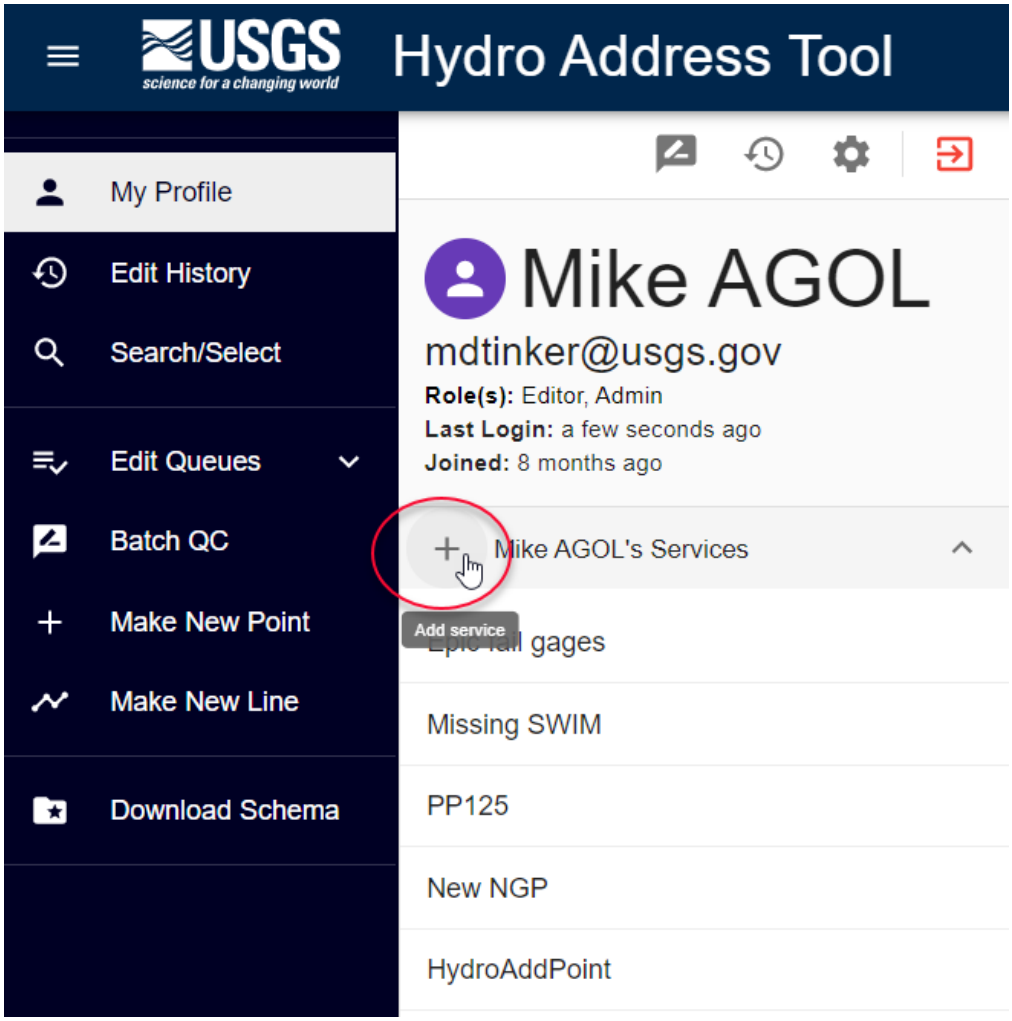
1 From the item page, click a layer.



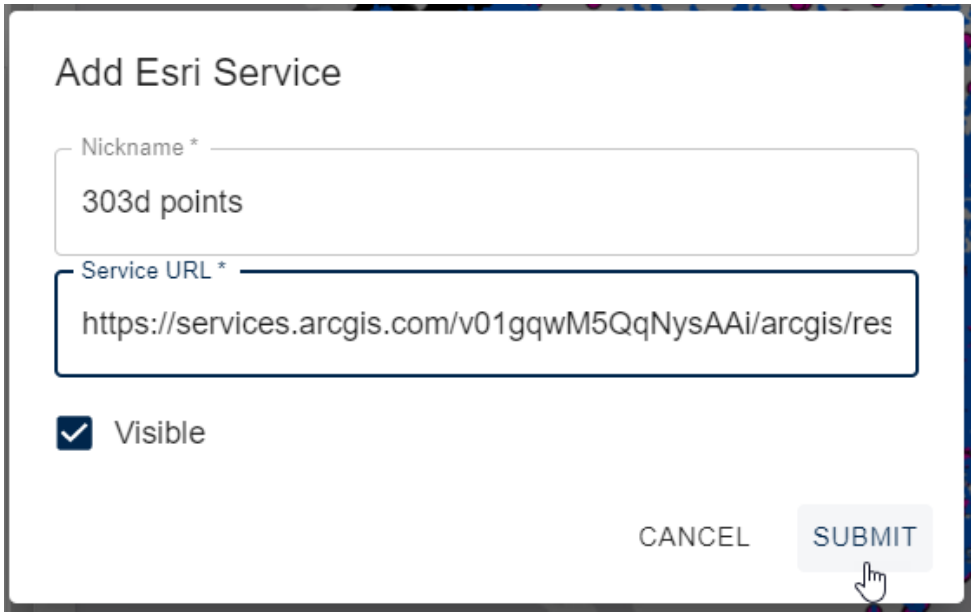
2 From layer details, copy the URL.



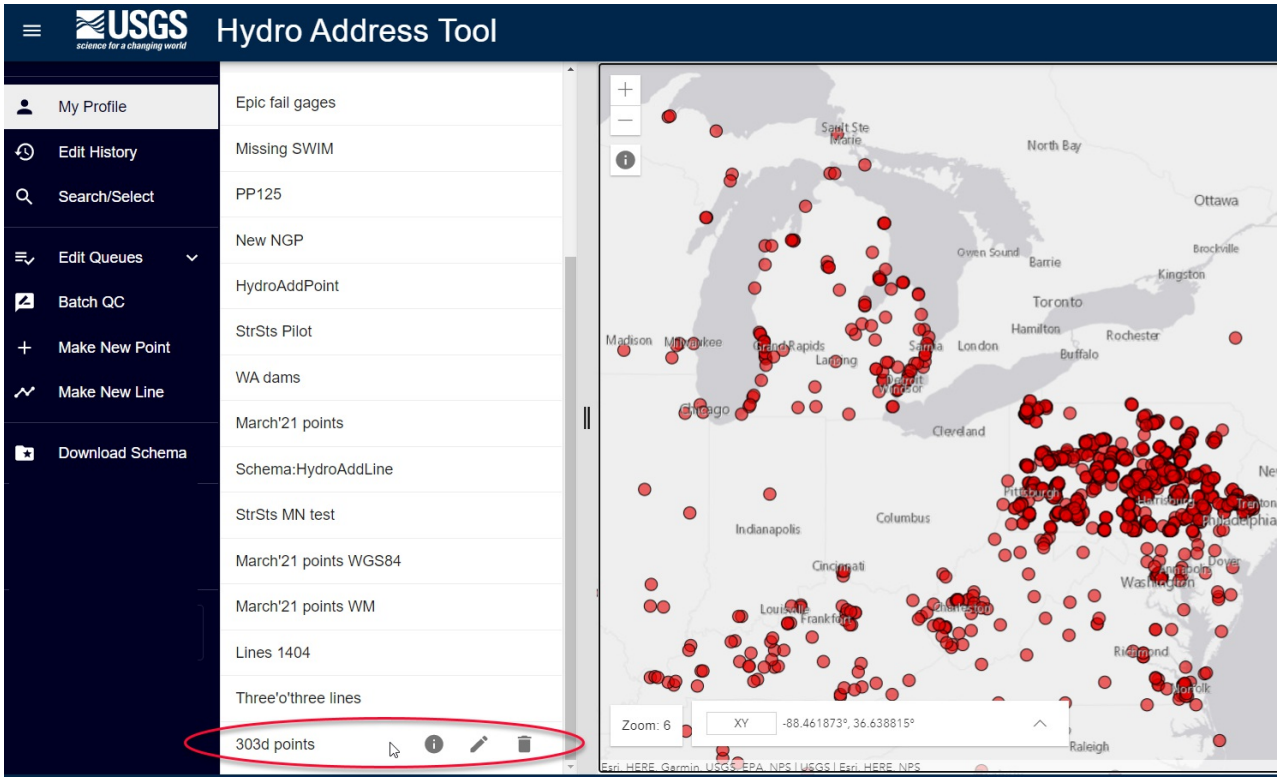
3 Go to HydroAdd tool. From My profile, click Add Service button.



4 Paste the URL and enter a nickname for the service.



5 The data appears in your list of services and on the HydroAdd map.



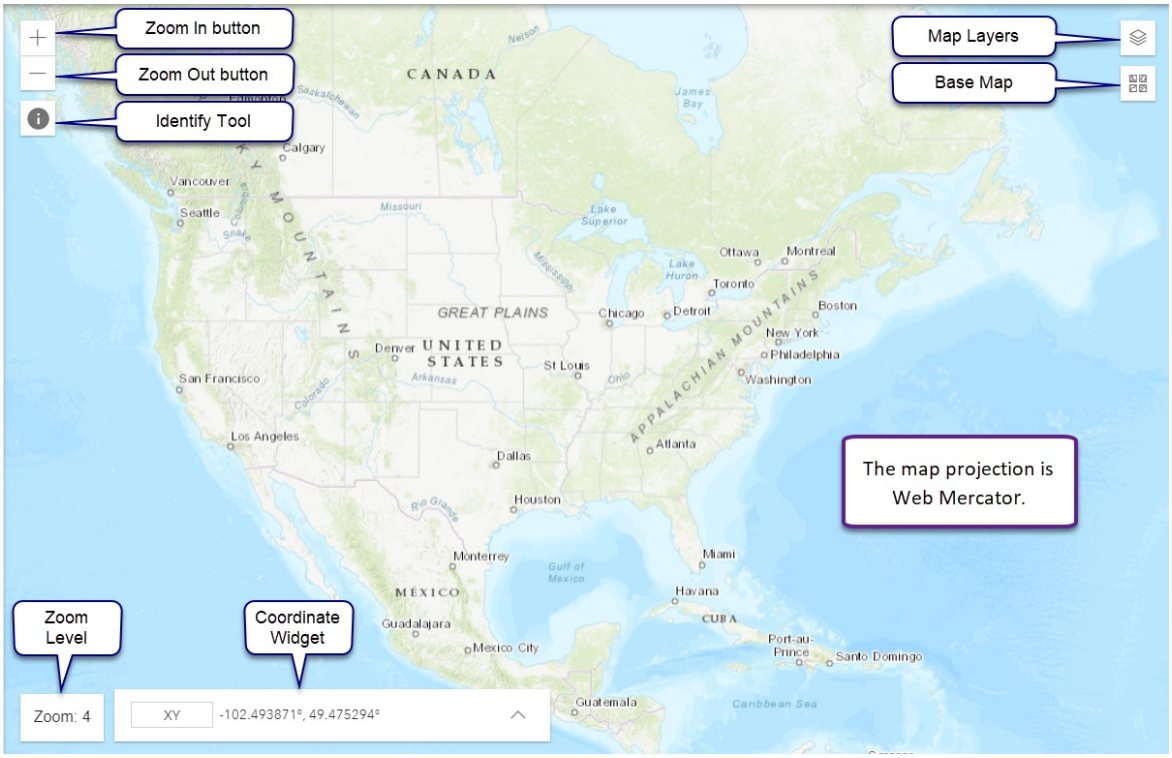
You are ready to edit!

Map Functions

The map display has functions to pan, to zoom, to show coordinates, and to identify features on NHD and service layer features on the map.

Map Projection

The map display projection is set to Web Mercator. You cannot change the display projection however, you can use the Coordinates Widget to convert map coordinates to other projections.



Zooming

Change the Zoom level with zoom buttons or by double clicking. You an also use the mouse wheel to control zoom levels.

- Click the + or - button in the upper left corner of the map to control zoom levels.

- Double click in the map to zoom in one level.
- Ctrl + double click to zoom out one level.

Panning

Use the panning function to navigate the map.

NOTE: The Identify Tool must be inactive to pan the map.

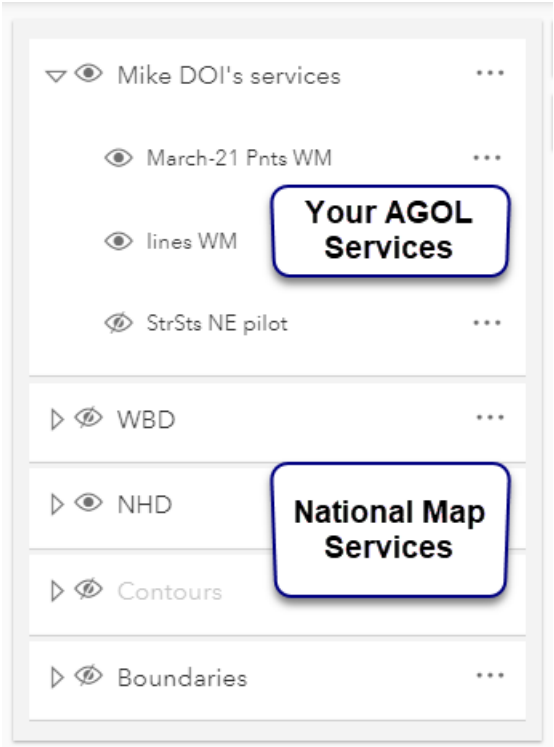
1 Hover cursor on map.
2 Click and hold.
3 Drag cursor across map. Cursor changes to a hand while the map pans.

Map Layers

Control the visibility of service layers from the Map Layers pane.

You can control the visibility of your services on AGOL, and can also the visibility of National Map service layers including WBD, NHD, Contours, Hillshade, and Boundaries.

- Click the map layers button to open or close the map layers pane.
- Click the arrow to expand or contract the services.
  - contracted
  - expanded
- Click the eye to control visibility of the map layer.



Base Maps

HydroAdd has a variety of base maps to choose from. To change the base map, click the base map button and click the desired base map. To close base map panel, click the base map button again.

Learn more about HydroAdd Base Maps.

Identify Tool

Use the Identify tool, top left, to examine features attributes of map layers and service layers.

NOTE: The Identify Tool must be inactive to pan the map.

Learn more about the Identify Tool.

Coordinate Widget

Use the Coordinate Widget, bottom left, to view coordinates, to navigate to specified coordinates, to add conversions, to capture map coordinates, and to copy coordinates into your clip board. Coordinates update in real time as you move the cursor or pan the map.

Learn more about the Coordinate Widget.

Base Maps

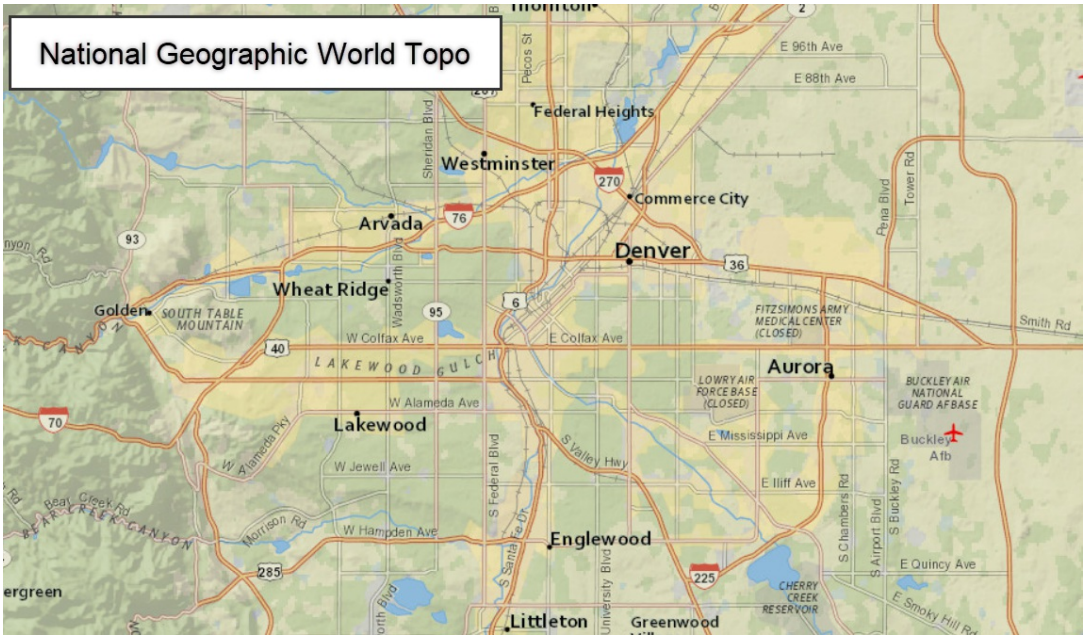
HydroAdd has a variety of base maps to choose from. To change the base map, click the base map button and click the desired base map. To close base map panel, click the base map button again.

Available base maps include:

National Geographic World Topo

The National Geographic World Map was developed by National Geographic and Esri and reflects the distinctive National Geographic cartographic style in a multi-scale reference map of the world. From the Esri Living Atlas:

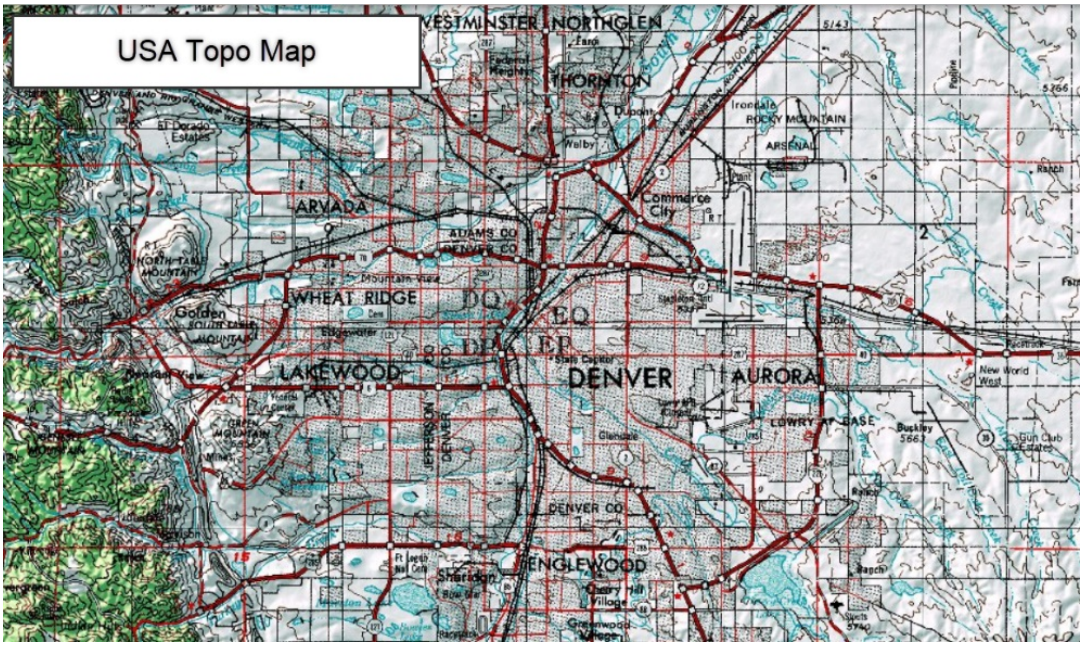
https://www.arcgis.com/home/item.html?id=b9b1b422198944fbbd5250b3241691b6



USA Topo Map

The USA Topo Maps presents land cover and detailed topographic maps for the United States. The map includes the National Park Service (NPS) Natural Earth physical map at 1.24km per pixel for the world at small scales, i-cubed eTOPO 1:250,000-scale maps for the contiguous United States at medium scales, and National Geographic TOPO! 1:100,000 and 1:24,000-scale maps (1:250,000 and 1:63,000 in Alaska) for the United States at large scales. The TOPO! maps are seamless, scanned images of United States Geological Survey (USGS) paper topographic maps.

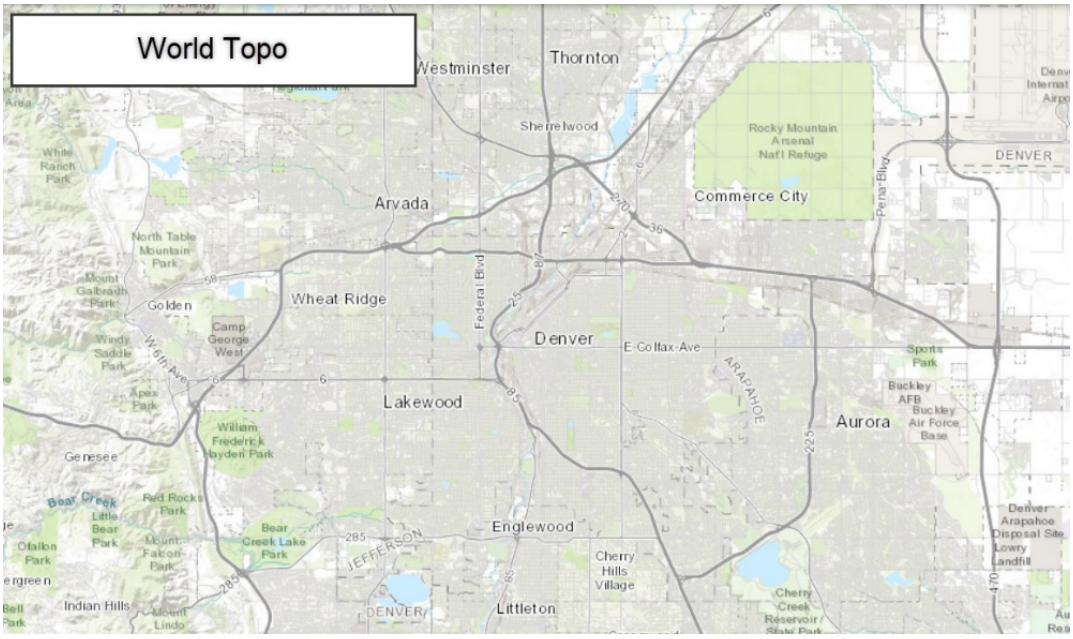
From Esri Living Atlas: https://usgs.maps.arcgis.com/home/item.html?id=931d892ac7a843d7ba29d085e0433465



World Topo

The Esri World Topo is compiled from a variety of authoritative sources from several data providers, including the U.S. Geological Survey (USGS), U.S. Environmental Protection Agency (EPA), U.S. National Park Service (NPS), Food and Agriculture Organization of the United Nations (FAO), Department of Natural Resources Canada (NRCAN), HERE, and Esri. Data for select areas is sourced from OpenStreetMap contributors. Specific country list and documentation of Esri's process for including OSM data is available to view . Additionally, data for the World Topographic Map is provided by the GIS community. You can contribute your data via the Community Maps Program and have it served by Esri. View the list of Contributors for the World Topographic Map .

https://usgs.maps.arcgis.com/home/item.html?id=f7a8b4dca5c44bd3a52c3fb8922a51fc



World Imagery

The Esri World Imagery provides one meter or better satellite and aerial imagery in many parts of the world and lower resolution satellite imagery worldwide. The map includes 15m TerraColor imagery at small and mid-scales (~1:591M down to ~1:72k) and 2.5m SPOT Imagery (~1:288k to ~1:72k) for the world. The map features 0.5m resolution imagery in the continental United States and parts of Western Europe from Maxar. Additional Maxar sub-meter imagery is featured in many parts of the world. In other parts of the world, imagery at different resolutions has been contributed by the GIS User Community. In select communities, very

high-resolution imagery (down to 0.03m) is available down to ~1:280 scale. You can contribute your imagery to this map and have it served by Esri via the Community Maps Program. View the list of Contributors for the World Imagery Map.

https://usgs.maps.arcgis.com/home/item.html?id=10df2279f9684e4a9f6a7f08febac2a9

World Hillshade

The Esri World Hillshade portrays elevation as an artistic hillshade. The map is designed to be used as a backdrop for topographical, soil, hydro, landcover or other outdoor recreational maps. The map was compiled from a variety of sources from several data providers. The basemap has global coverage down to a scale of ~1:72k. In the United States, Western Europe, Finland, and Norway coverage is provided to ~1:18k. Additionally, Netherlands, Denmark, Finland and select areas of the U.S. are provided down to ~1:9k.

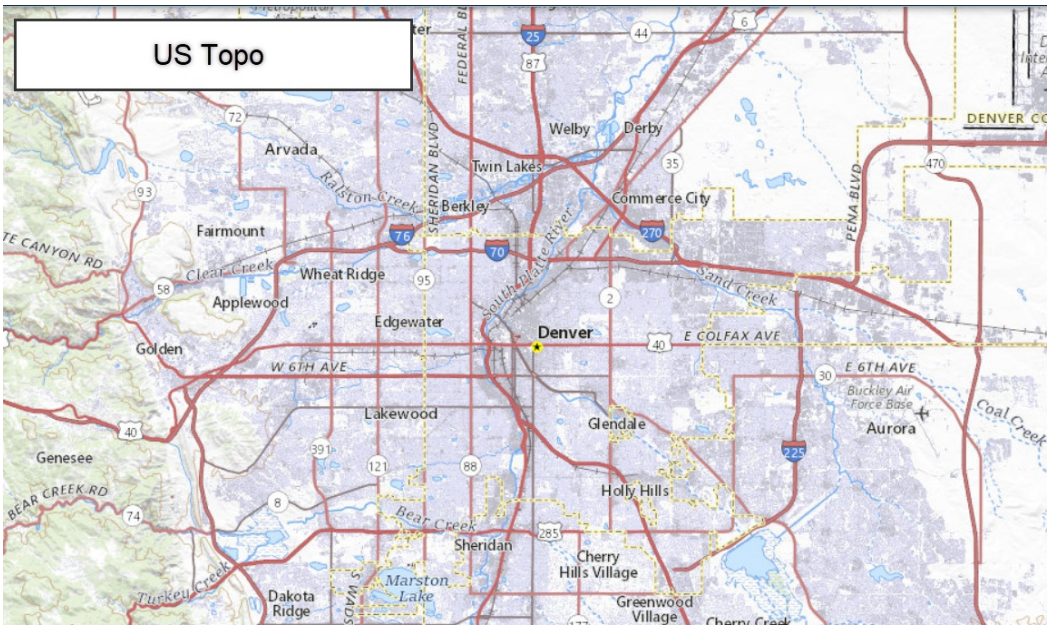
https://usgs.maps.arcgis.com/home/item.html?id=f47a5a35be8c41f7890c1763f65a6d9f

US Topo

The USGS Topo is a tile cache base map service that combines the most current data in The National Map (TNM), and other public-domain data, into a multi-scale topographic reference map. Data themes included are Boundaries, Geographic Names, Transportation, Contours, Hydrography, Land Cover, Shaded Relief, and Bathymetry. This service is designed to provide a seamless

view of TNM data in a geographic information system (GIS) accessible format.

https://basemap.nationalmap.gov/arcgis/rest/services/USGSTopo/MapServer



US Imagery

The USGS Imagery Only is a tile cache base map service of orthoimagery in The National Map visible to the 1:9,027 zoom scale. Orthoimagery data typically are high resolution aerial images that combine the visual attributes of an aerial photograph with the spatial accuracy and reliability of a planimetric map. USGS digital orthoimage resolution may vary from 6 inches to 1 meter. In the former resolution, every pixel in an orthoimage covers a six-inch square of the earth's surface, while in the latter resolution, one meter square is represented by each pixel. Blue Marble: Next Generation and Landsat imagery data sources are displayed at small to medium scales, however, the majority of the imagery service source is from the National Agriculture Imagery Program (NAIP) for the conterminous United States. The data is 1 meter pixel resolution collected with "leaf-on" conditions. Collection of NAIP imagery is administered by the U.S. Department of Agriculture's Farm Service Agency (FSA). In areas where NAIP data is not available, other imagery may be acquired through partnerships by the USGS. For Alaska, 10-meter resolution SPOT imagery is provided for viewing. The National Map download client allows free downloads of public domain, 1-meter resolution orthoimagery in JPEG 2000 (jp2) format for the conterminous United States, including some locations at 1-foot (or better) resolution also in JPEG 2000 (jp2) format. However, the 10-meter Alaska orthoimagery data will not be available for direct download from the National Map due to license restrictions. For additional information on orthoimagery, go to https://nationalmap.gov/ortho.html

https://basemap.nationalmap.gov/arcgis/rest/services/USGSImageryOnly/MapServer

US Topo Hillshade

The USGS US Topo Hillshade base map service from The National Map was created with data from the 3D Elevation Program (3DEP) for large and medium scales (1:9,028 through 1:1,155,581), and Global Multi-resolution Terrain Elevation Data 2010 (GMTED2010) for small scales (1:2,311,162 through 1:295,828,764). 3DEP maintains a seamless dataset of best available raster elevation data, as LIDAR and as digital elevation models (DEMs), for the conterminous United States, Alaska, Hawaii, and Territorial Islands. Resolutions available include 1-meter, 3-meter (1/9-arc-second), 10-meter (1/3-arc-second), 30-meter (1-arc-second), and 60-meter (2-arc-second; only in Alaska). 3DEP also contains coverage of Canada, Mexico, Central America, and the Caribbean at 30-meter (1-arc-second) resolution. 3DEP shaded relief was derived with a multi-directional hillshade technique. Small-scale shaded relief was created with a single-direction hillshade from GMTED2010 global elevation data at 7.5-, 15-, and 30-arc-second resolutions, and resampled further for scales 1:18,489,298 and smaller. Ocean areas are left unfilled for maximum flexibility by end users. For additional information, go to https://www.usgs.gov/core-science-systems/ngp/3dep, https://www.usgs.gov/core-science-systems/eros/coastal-changes-and-impacts, and https://apps.nationalmap.gov/3depdem/.

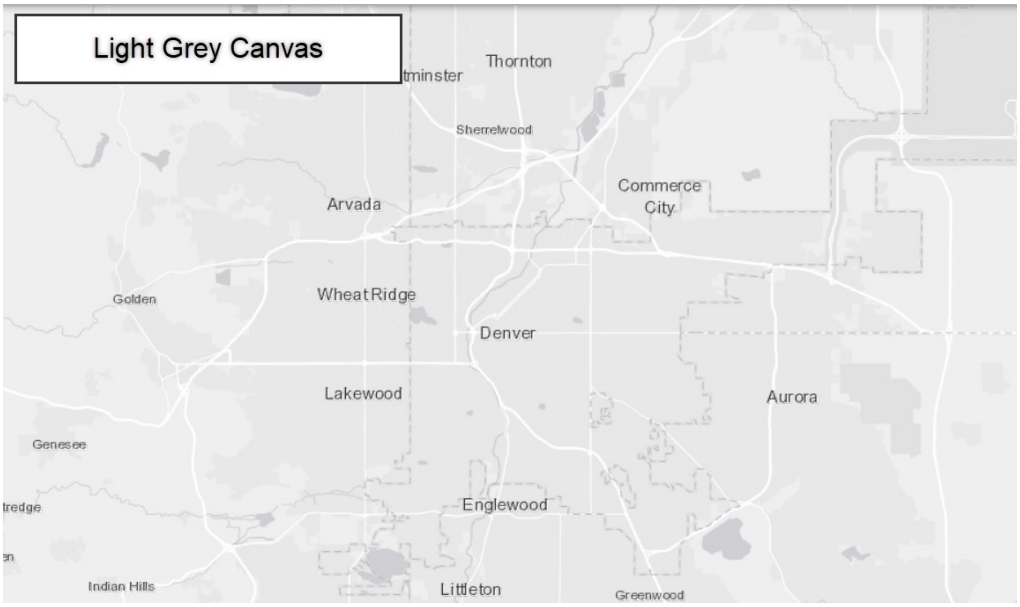
https://basemap.nationalmap.gov/arcgis/rest/services/USGSShadedReliefOnly/MapServer

The Hillshade turns off at zoom level 16.

Esri Light Gray Canvas

This web map provides a detailed vector basemap for the world symbolized with a light gray, neutral background style with minimal colors, labels, and features that is designed to draw attention to your thematic content.

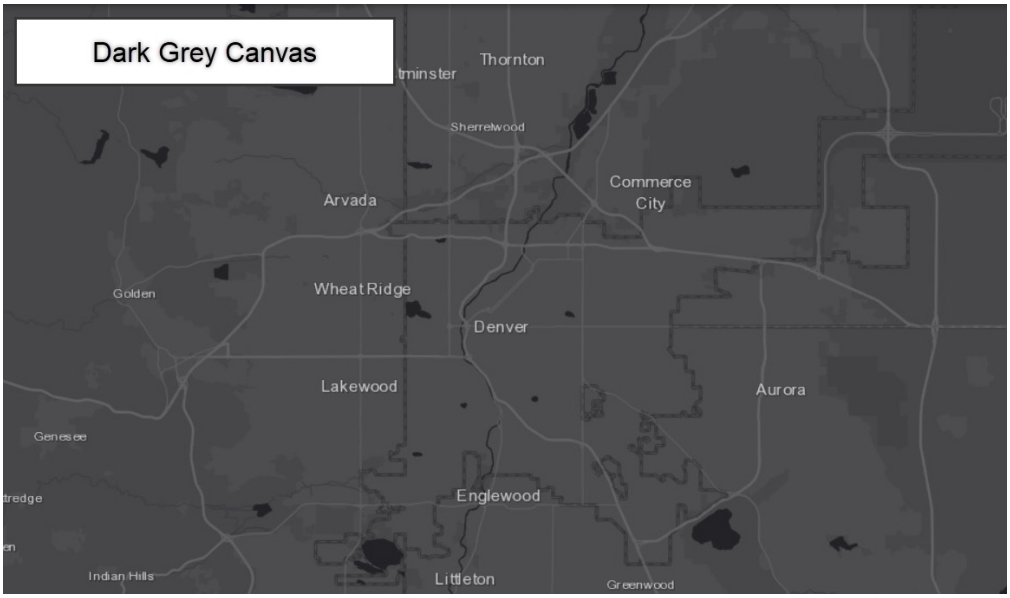
https://usgs.maps.arcgis.com/home/item.html?id=979c6cc89af9449cbeb5342a439c6a76



Esri Dark Gray Canvas

This web map provides a detailed vector basemap for the world symbolized with a dark gray, neutral background style with minimal colors, labels, and features that is designed to draw attention to your thematic content.

https://usgs.maps.arcgis.com/home/item.html?id=358ec1e175ea41c3bf5c68f0da11ae2b



None

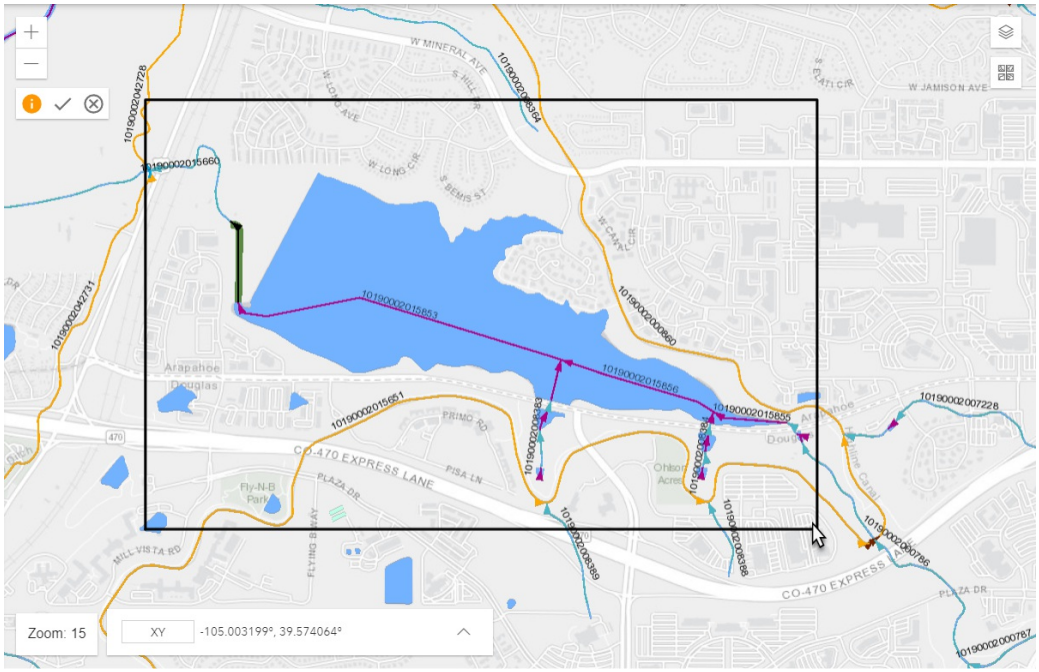
No base map.

Identify Tool

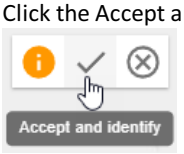
Use the Identify tool to examine features attributes of map layers and service layers.

NOTE: The Identify Tool must be inactive to pan the map.

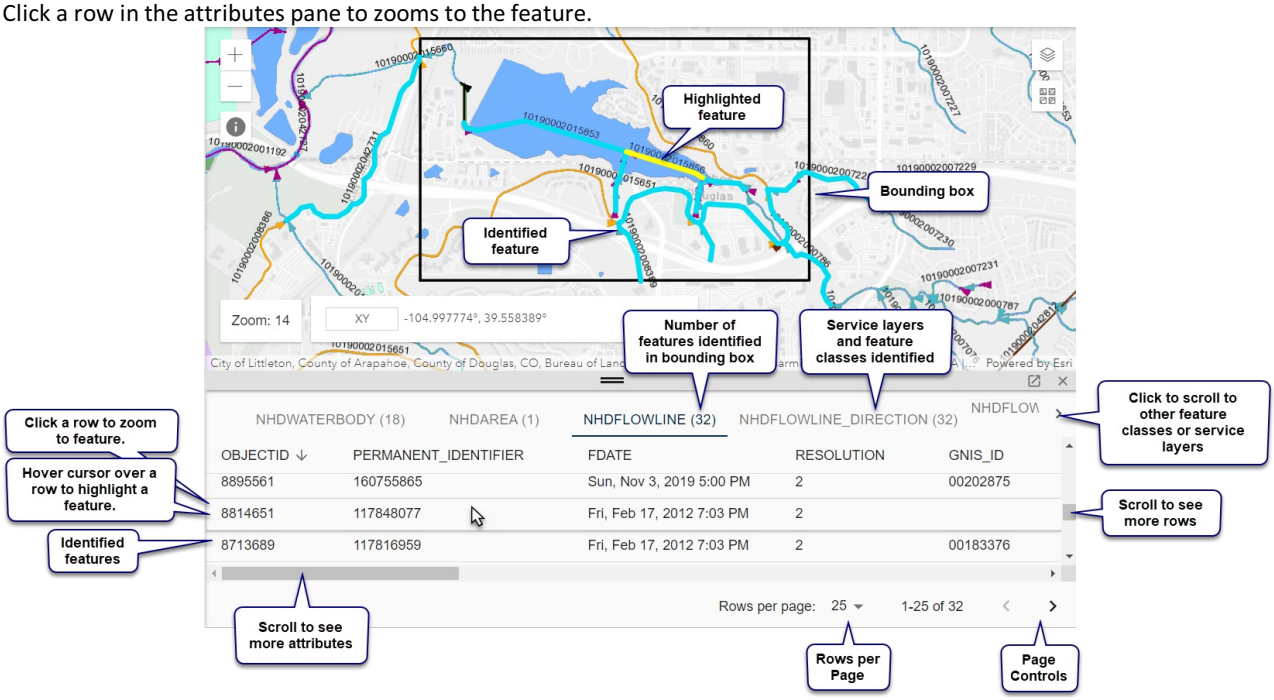
1 Click the identify button.
2 Hover mouse on map, click, and drag.



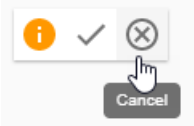
3 Click the Accept and Identify button within the Identify buttons.



4 The identify attributes pane opens below the map.
5 Click the identify scrolling arrow › at the top of the identify pane to see other service layers.
6 Click a service layer at the top of the identify pane to switch service layers.
7 Hover cursor over feature in a service layer to highlight features on the map.
8 Click a row in the attributes pane to zooms to the feature.



9 Turn off the identify tool with the Cancel button within the Identify buttons.
This allows you to pan the map without re-identifying features.



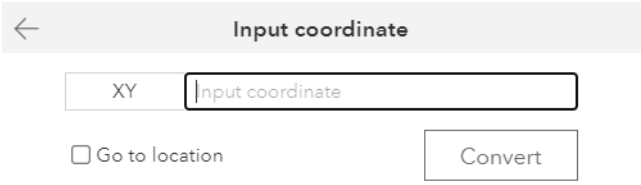
Coordinate Widget

Use the Coordinate Widget, bottom left, to view coordinates, to navigate to specified coordinates, to add conversions, to capture map coordinates, and to copy coordinates into your clip board. Coordinates update in real time as you move the cursor or pan the map.

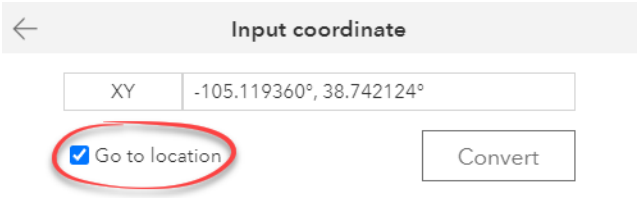
Go to specific coordinates

1 Select the carrot on the Coordinate Widget ^.
   a Coordinate Widget expands.
2 Select the pencil button on the Coordinate Widget.

3 Coordinate Widget changes to a field that can accept text/numbers.



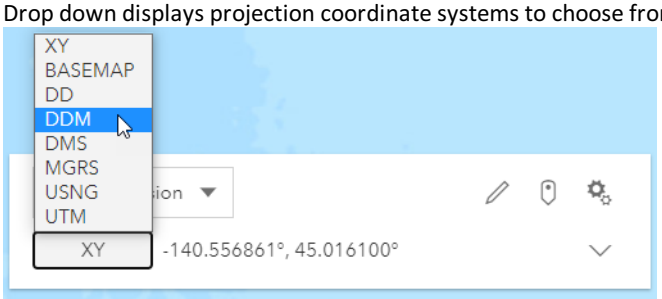
4 Input coordinates by typing or pasting into the empty field.
5 Check Go to Location to zoom the map to those coordinates.



6 Select Convert
   a If Zoom to Location check box was selected, the map is zoomed to the new location. A white hollow dot appears on the map in the new location.
   b If Zoom to Location checkbox was unselected, a hollow dot appears on the map in the new location, but map view does not change.
7 Confirm the map is in the correct/desired coordinate project.

Change the coordinate system

1 Select the carrot on the Coordinate Widget. ^
   a Coordinate Widget expands.
2 Select the drop down next to coordinates.
   a Drop down displays projection coordinate systems to choose from.



3 Select desired project.
4 The new projection displays next to the coordinates.

Convert coordinates

1 Click the carrot on the Coordinate Widget. ^

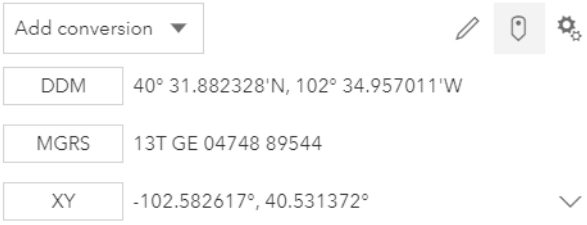
a Coordinate Widget expands.

2 Click the Add Conversion drop down.

a A list of conversions appears in the drop down.

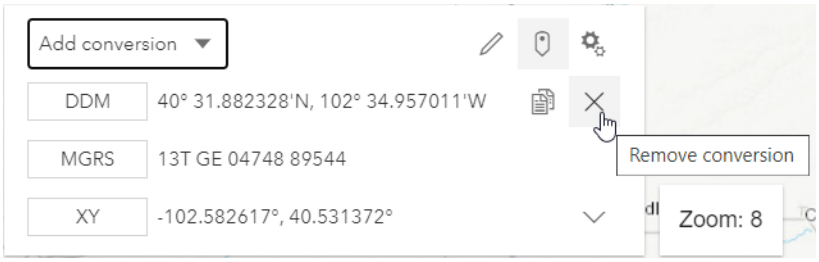
3 Select the desired conversion.

a The conversion is displayed above the original projection.



4 Hover cursor over a conversion and click the X button.

a Converted coordinates are removed.



Get coordinates

1 Click the carrot on the Coordinate Widget.

a Coordinate Widget expands.

2 Select the map marker button.

a Cursor turns to Editing Cursor.

3 Select a location on the map.

a Coordinates populate in the coordinate widget.

b Hollow dot appears where you clicked.

Copy coordinates

1 Click the carrot on the Coordinate Widget.

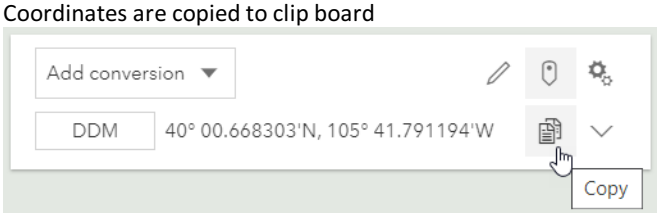
a Coordinate Widget expands.

2 Capture coordinates or click on the map.

a Hollow dot appears on map.

3 Click the copy button.

a Coordinates are copied to clip board

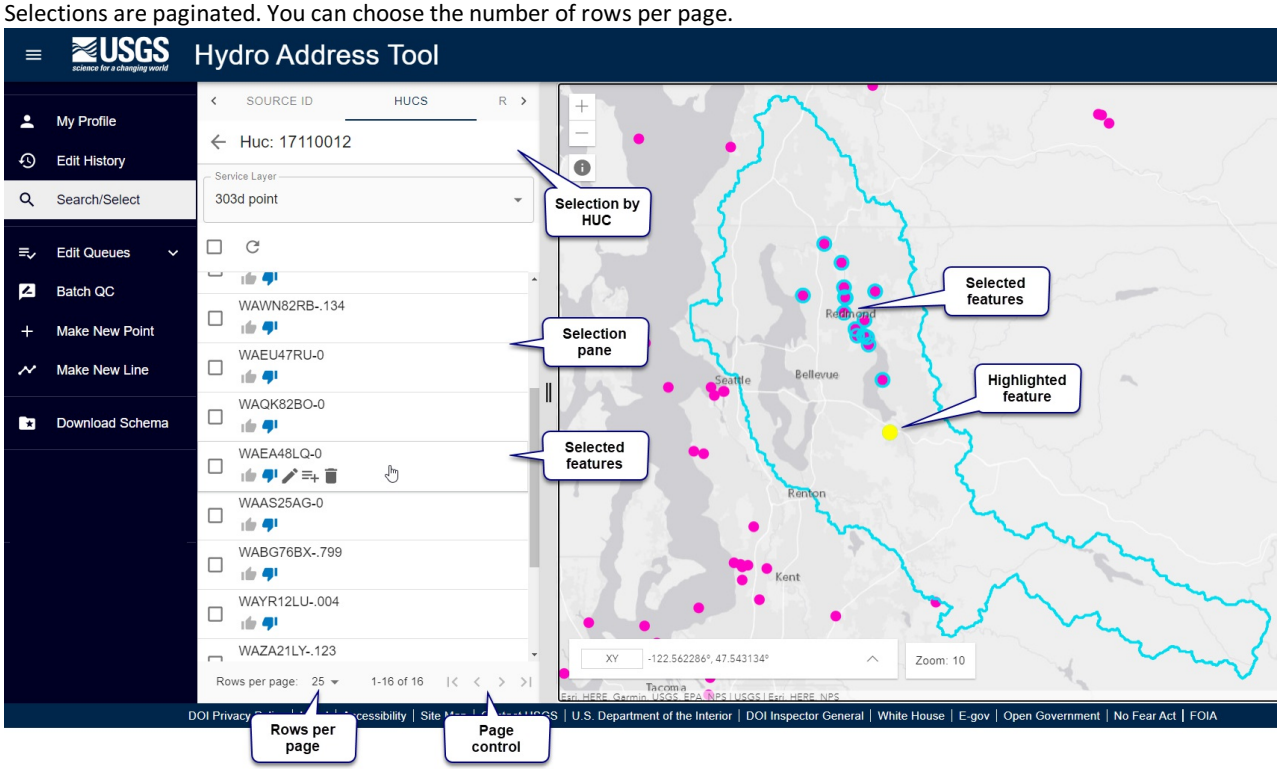


Search/Select

You can search your service layer to make a selection. A selection is a temporary list of features in your service layer. Features in the selection appear as rows in the selection pane.

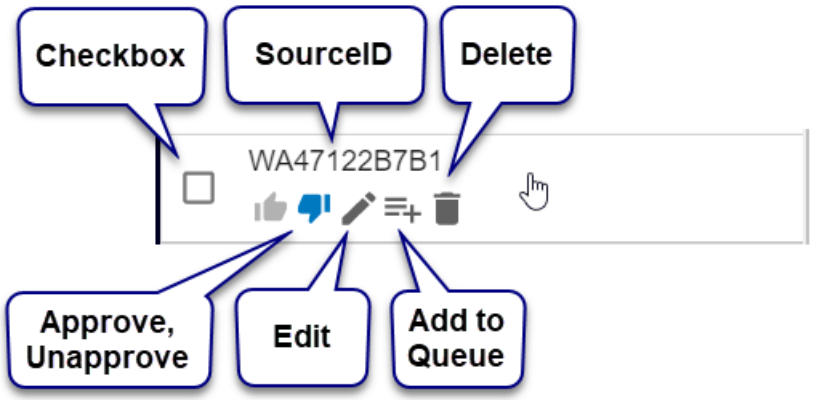
NOTE: To make a selection permanent, add it to a queue.

- Click a row in a selection to zoom to the feature at level 16. This allows you to inspect the feature before editing it.
- Selected items appear cyan on the map.
- Hover the cursor over a row to highlight features yellow on the map.
- To save a selection, add it to a queue.
- Selections are paginated. You can choose the number of rows per page.



Select Row functions

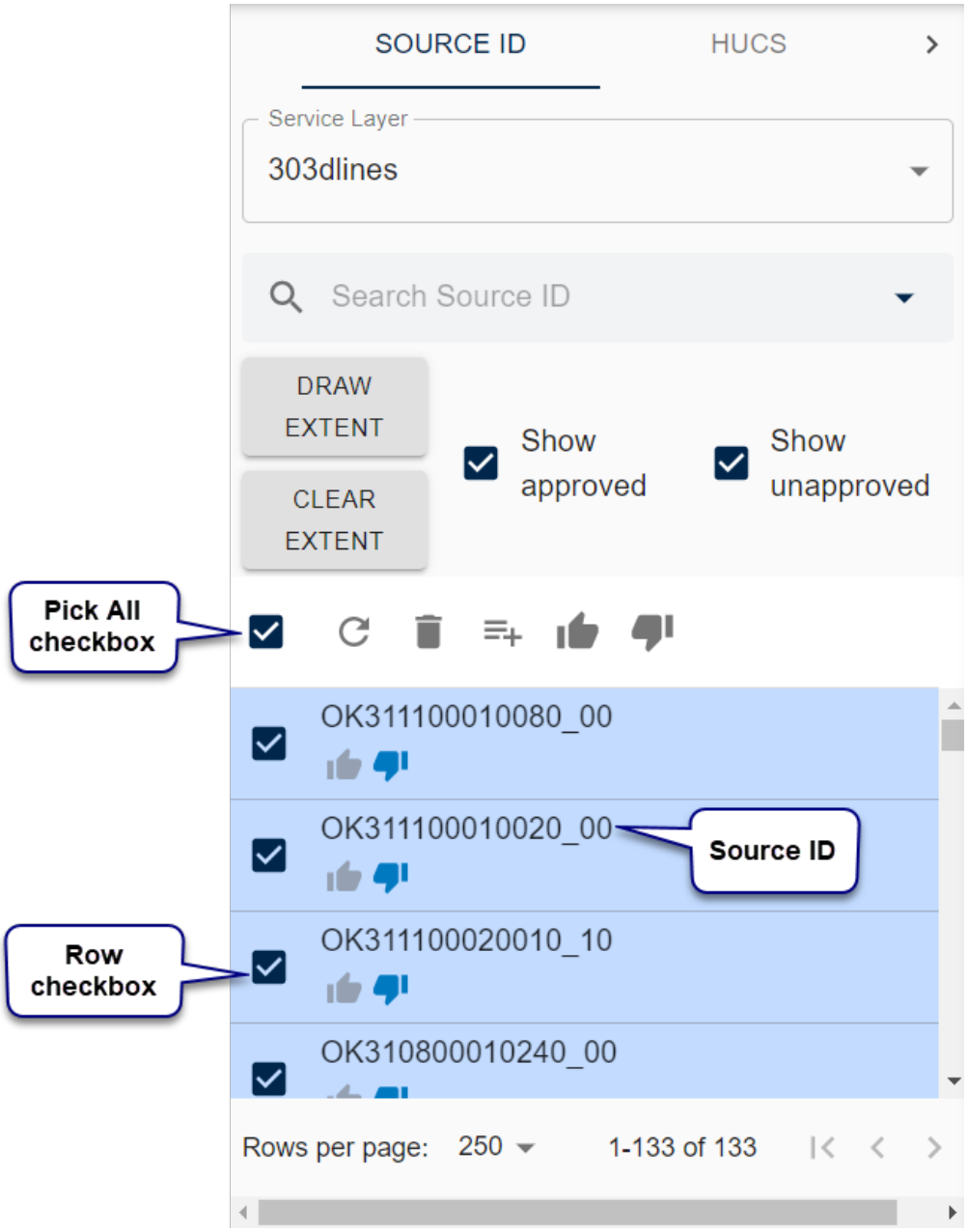
Click the row to zoom to the feature. Hover the cursor over a row to access the row buttons. Each row has four buttons: Approve, Unapprove, Edit, Add to Queue, and Delete.



Select row Checkbox

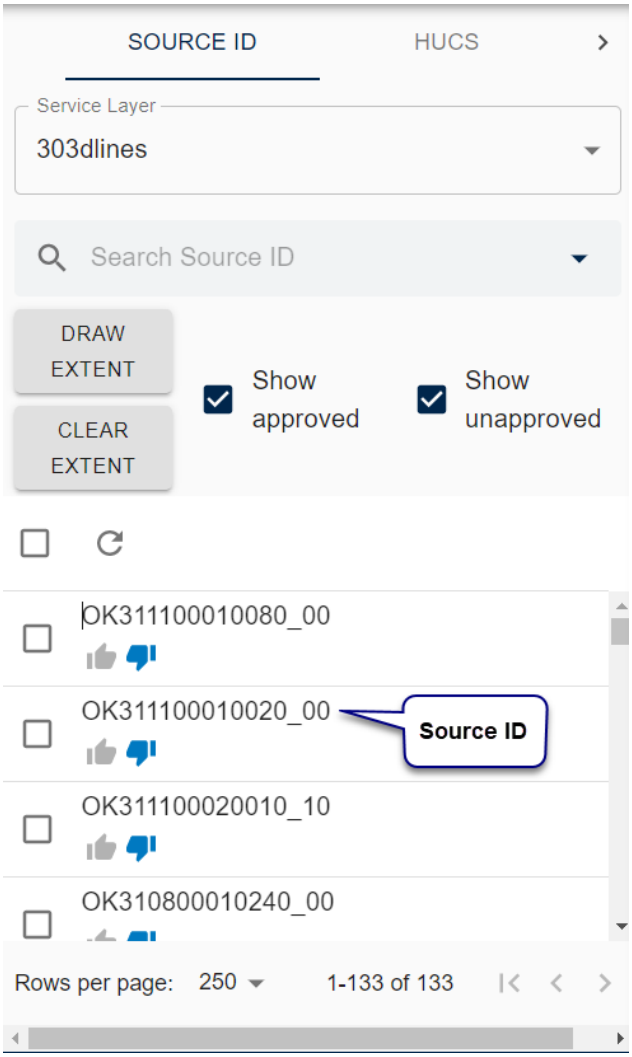
Use the Pick All checkbox to pick all rows on a page or use the checkbox in a row to pick single features. Note that the Pick All checkbox only picks rows displayed on a page. For example, if there are 10 rows in the Search/Select pane, only 10 features will be

picked. To pick more rows, increase the number of rows per page or go to the next page. Once you have picked multiple rows, you can delete, approve/unapprove, or add to/remove from a queue.



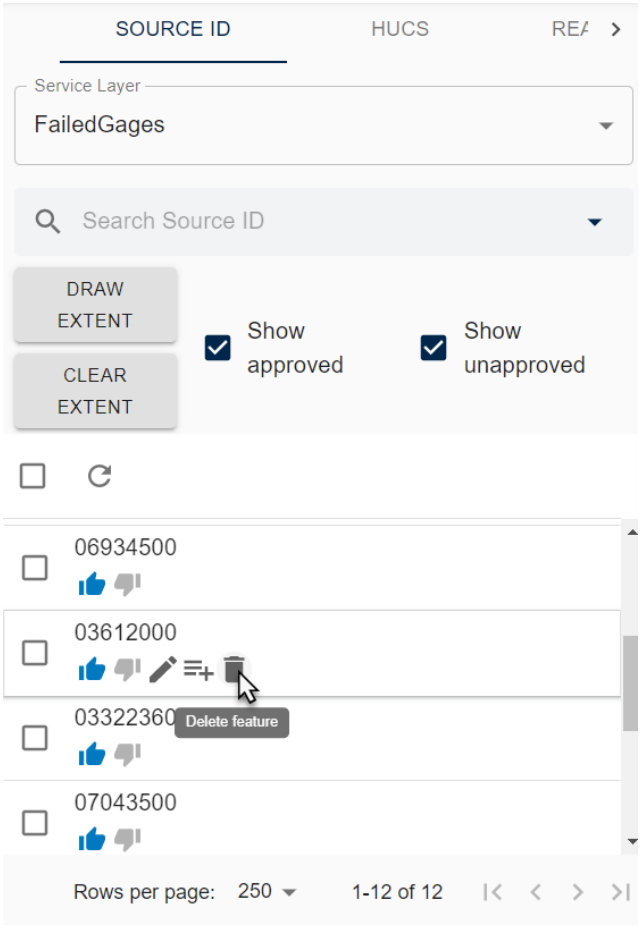
Select row SourceID label

HydroAdd requires a SourceID as a unique identifier for all features in your service. Rows in a selection or queue show the SourceID. You normally assign SourceIDs to features in your service during schema preparation in ArcGIS Pro. If a feature does not a have a SourceID, HydroAdd requires you to enter one to save your edits. Likewise, new features must have a SourceID to save.

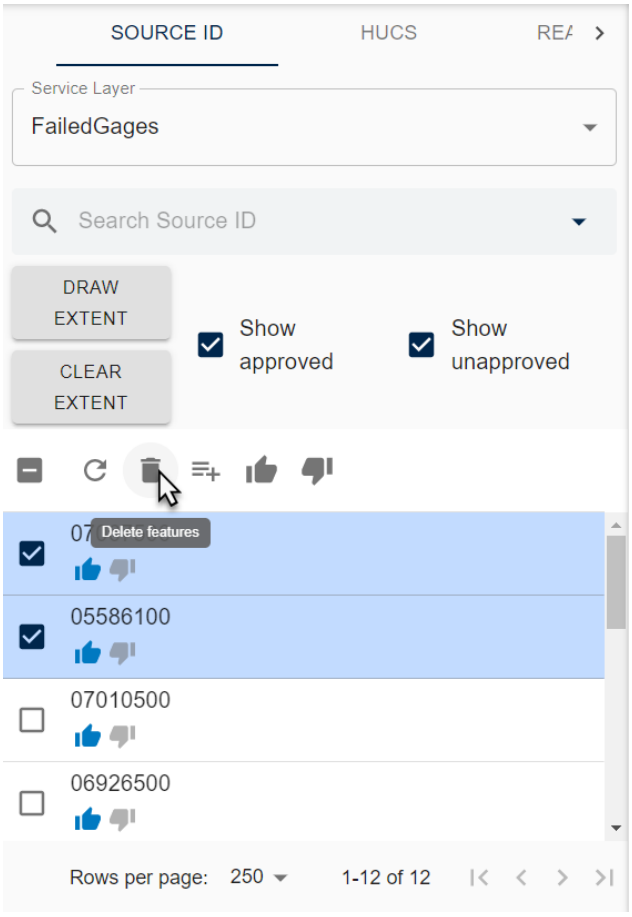


Select row Delete button

Delete permanently removes a feature from your service layer. To delete a single feature, hover the cursor over a row and click the delete button.

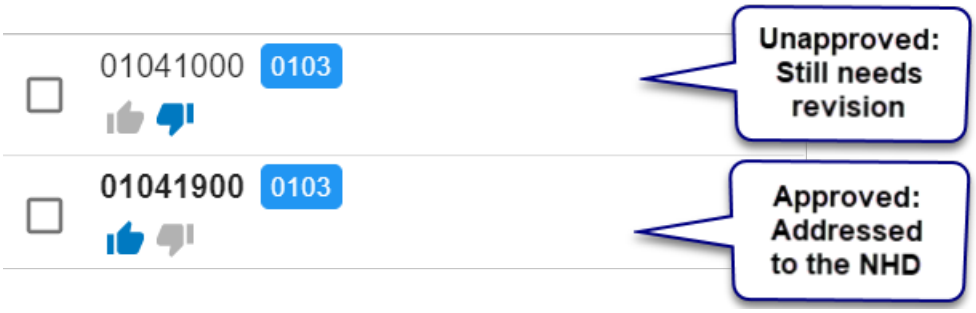


To delete multiple features, use the checkbox to pick the features you want to delete.

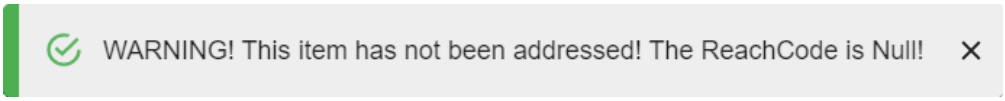


Select row Approve, Unapprove buttons

Features have two statuses: approved and unapproved. Click the thumbs up button to approve a feature. Click thumbs down button to unapprove.



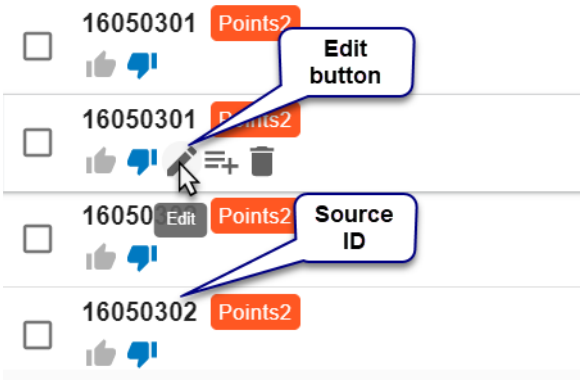
In general, approved features are addressed to the NHD, which means they have a ReachCode and Measure. However, HydroAdd does not strictly require approved features to be addressed. It is possible to approve features that have not been addressed. HydroAdd will warn you if you approve or save a feature that has not been addressed but does not disallow it.



Select row Edit button

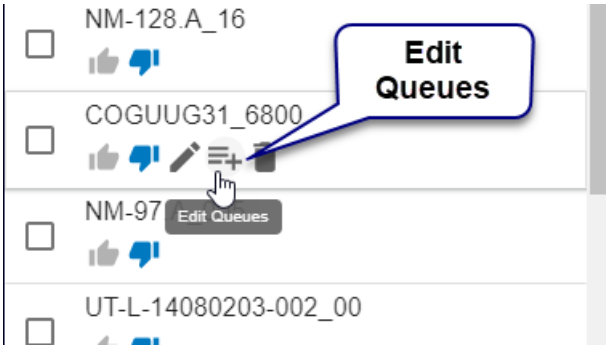
Click the edit button to edit a feature. When you click the edit button, the editing pane opens, and the editing crosshair cursor appears on the map. NOTE: the map must be at zoom level 14 for the crosshair cursor to appear.

Learn more about editing.



Select row Edit Queues button

Use the Edit Queue button to add or remove items from a queue.



Learn more about Edit Queues.

Learn how to add or remove features from a queue.

How to select

There are three ways you can select items from your service layer:

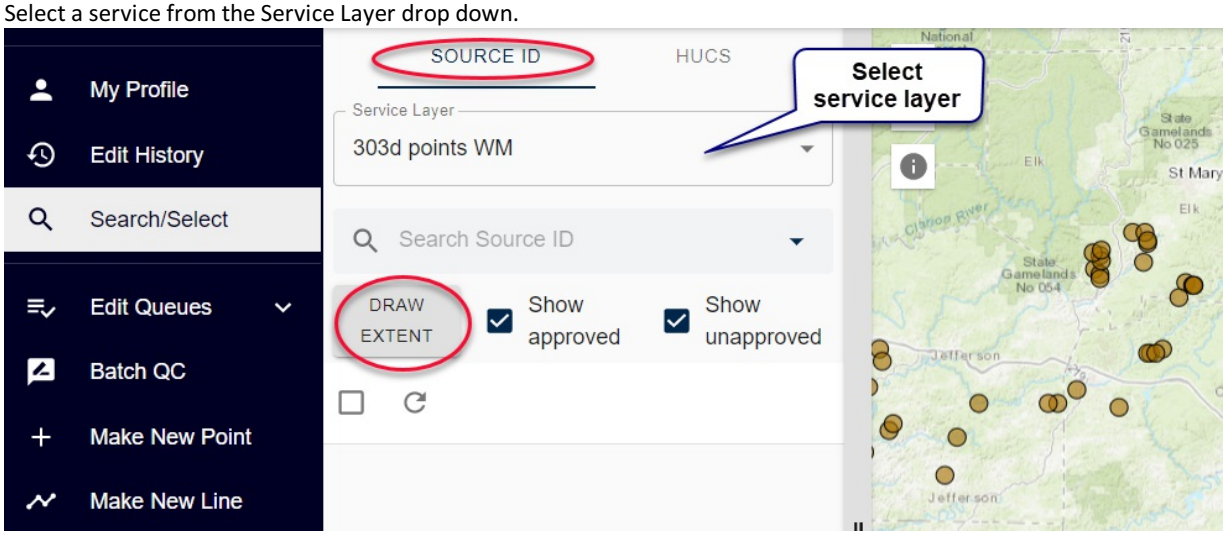
- Draw Extent
- Search by SourceID
- Search by Hydrologic Unit Code (HUC)

NOTE: To make a selection permanent, add it to a queue.

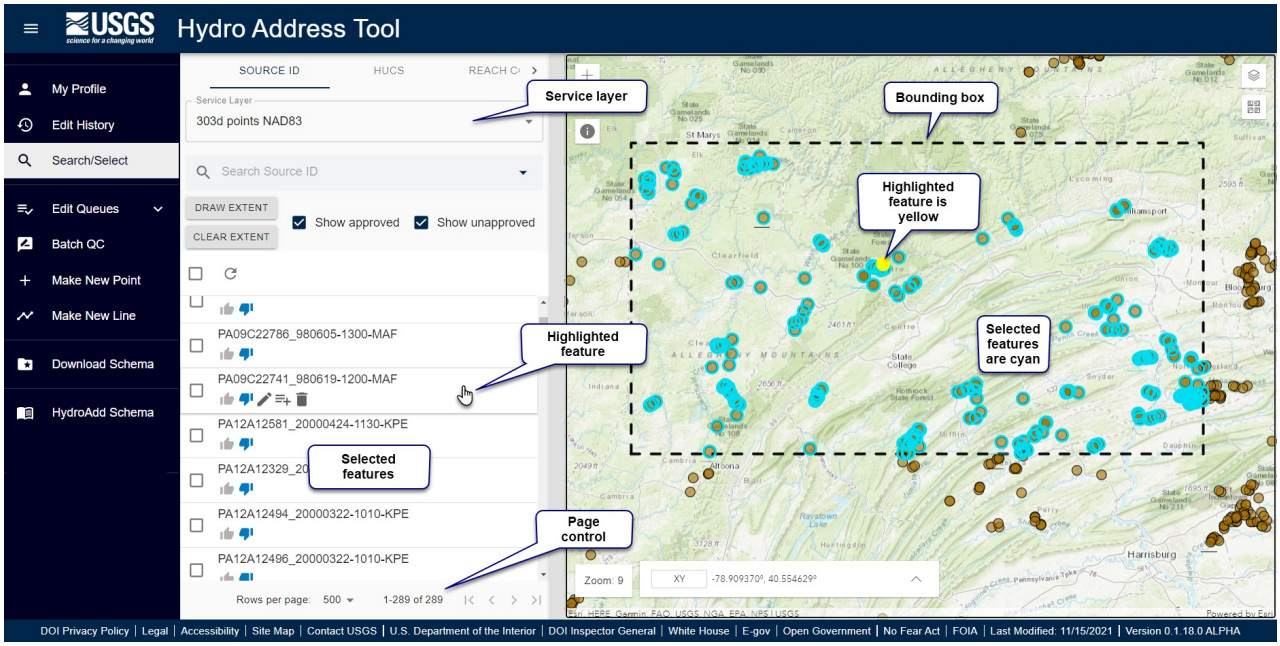
Select by Extent

To make a selection by drawing an extent:

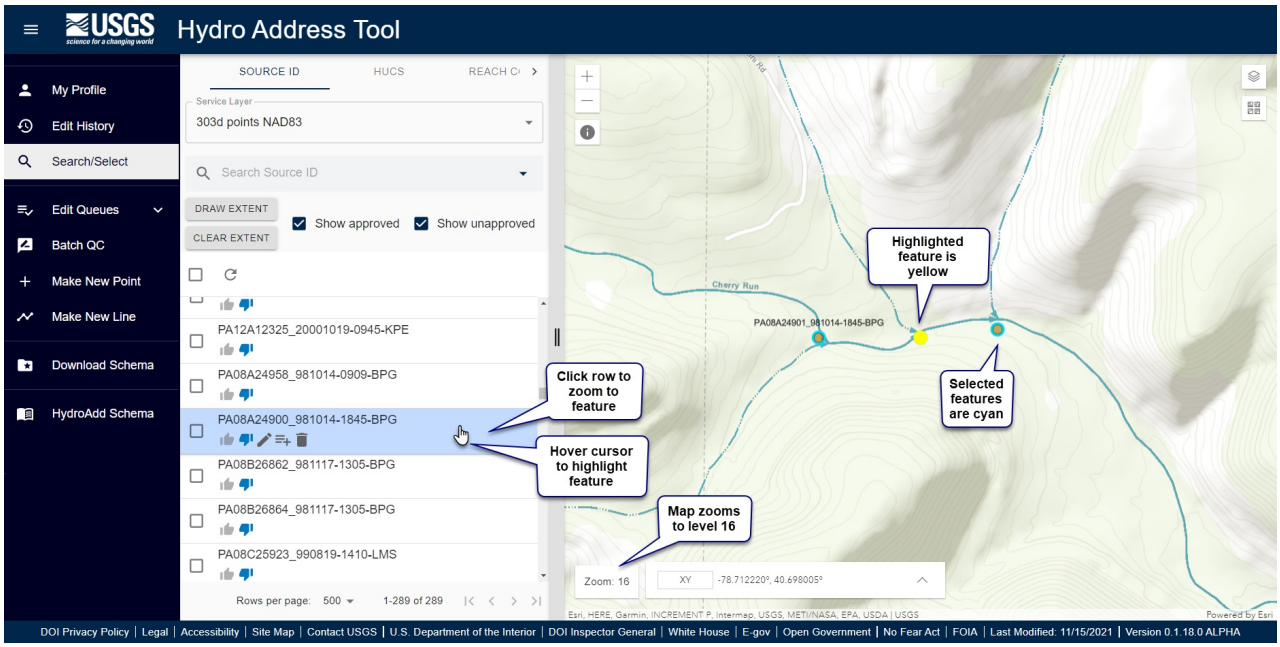
1 Click Search/Select > Source ID tab.
2 Select a service from the Service Layer drop down.



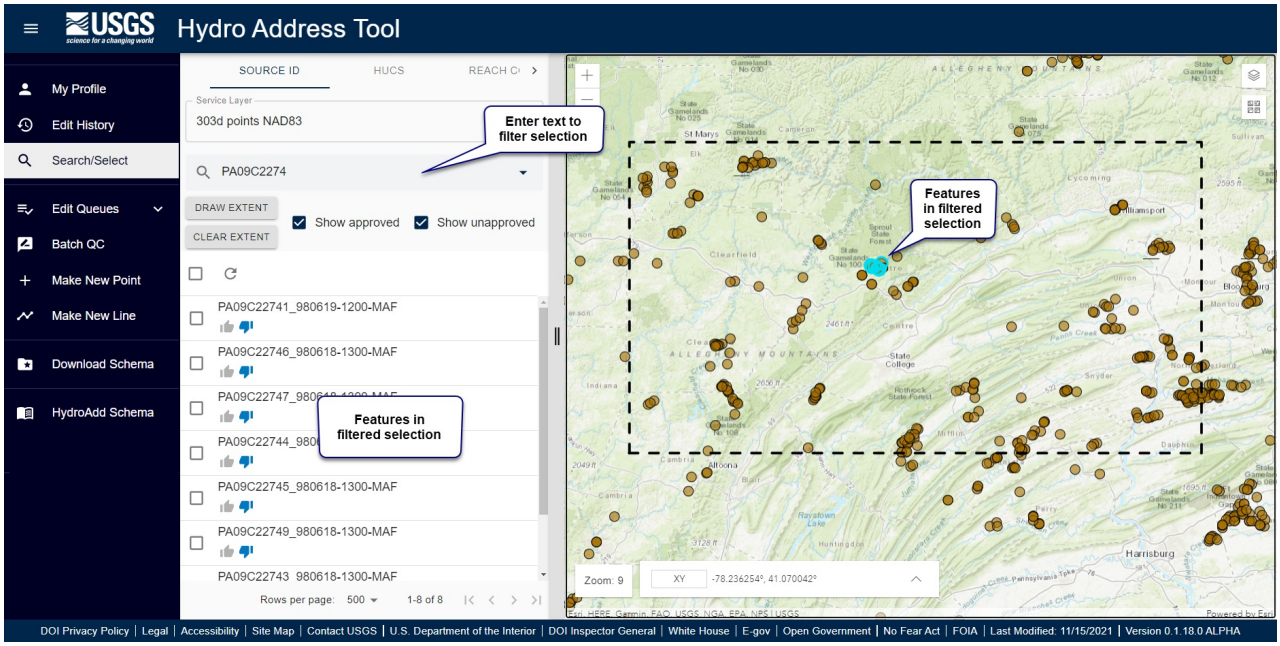
3 Pan the map to an area of interest.
4 Click DRAW EXTENT.
5 Draw a bounding box on the map.
6 Results appear in lower half of Search/Select pane.
7 Selected items appear cyan on the map display.
8 Hover the cursor over a row to highlight the features yellow on the map.



9 Click a row to zoom to the feature on the map.



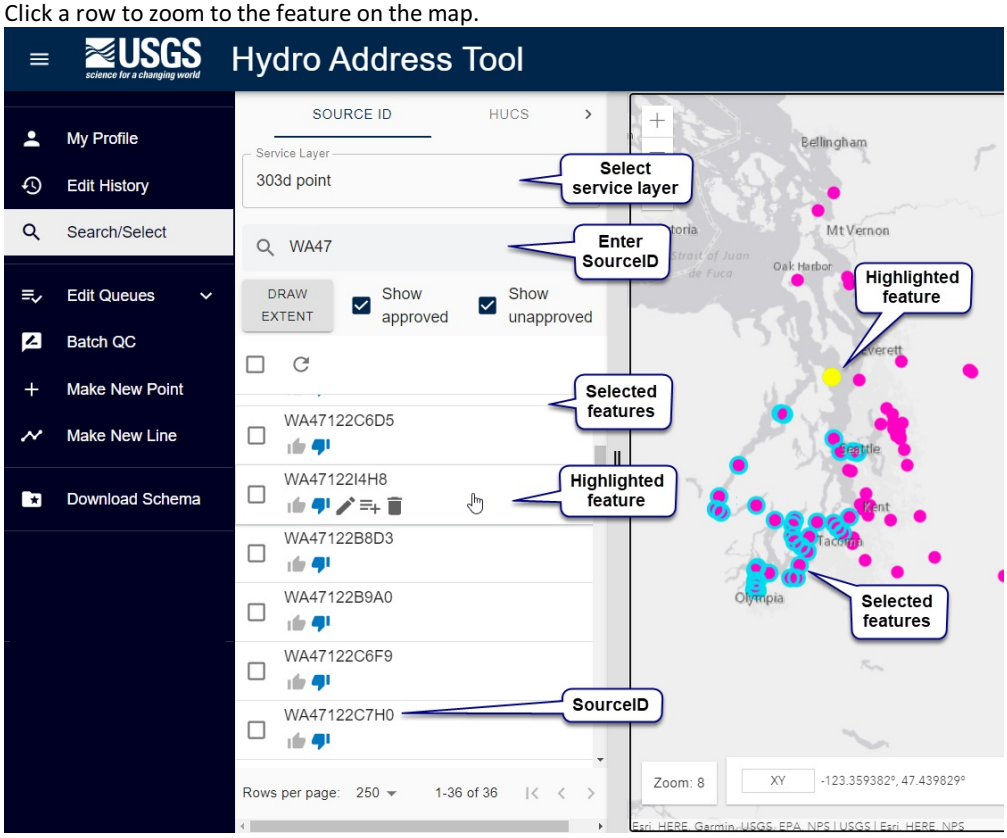
10 Enter a SourceID to filter the selection.



Search/Select by SourceID

Search a service layer by SourceID:

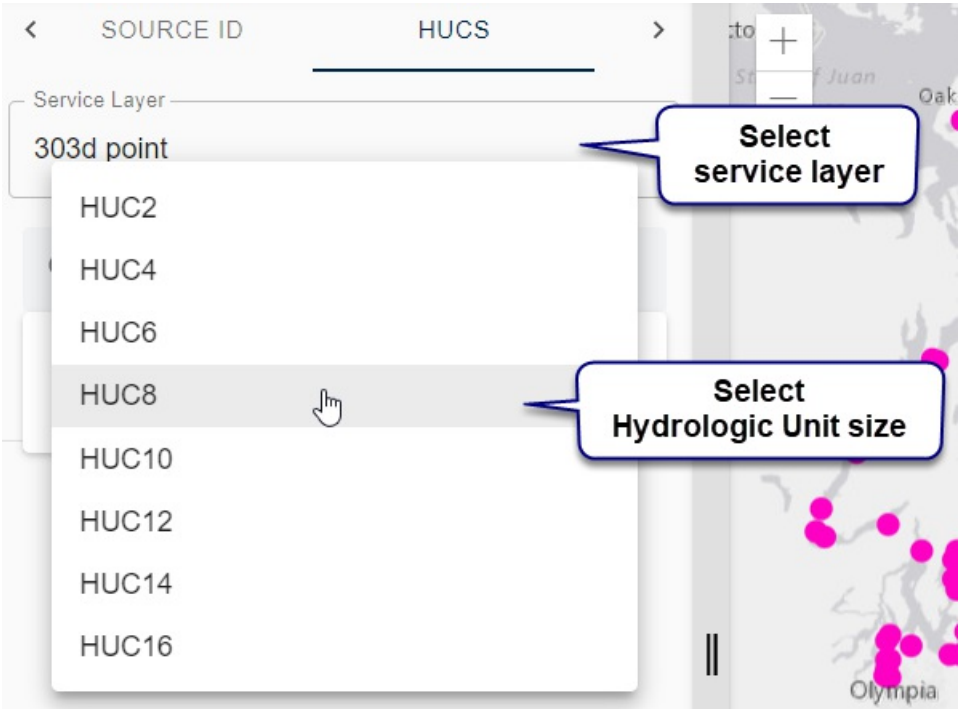
1 Select a service from the Service Layer drop down.
2 Enter a SourceID in search bar.
3 HydroAdd filters SourceIDs that start with the user entry.
4 Results appear in the lower half of the Search/Select pane.
5 Selected items appear cyan on the map.
6 Hover the cursor over a row to highlight the features yellow on the map.
7 Click a row to zoom to the feature on the map.



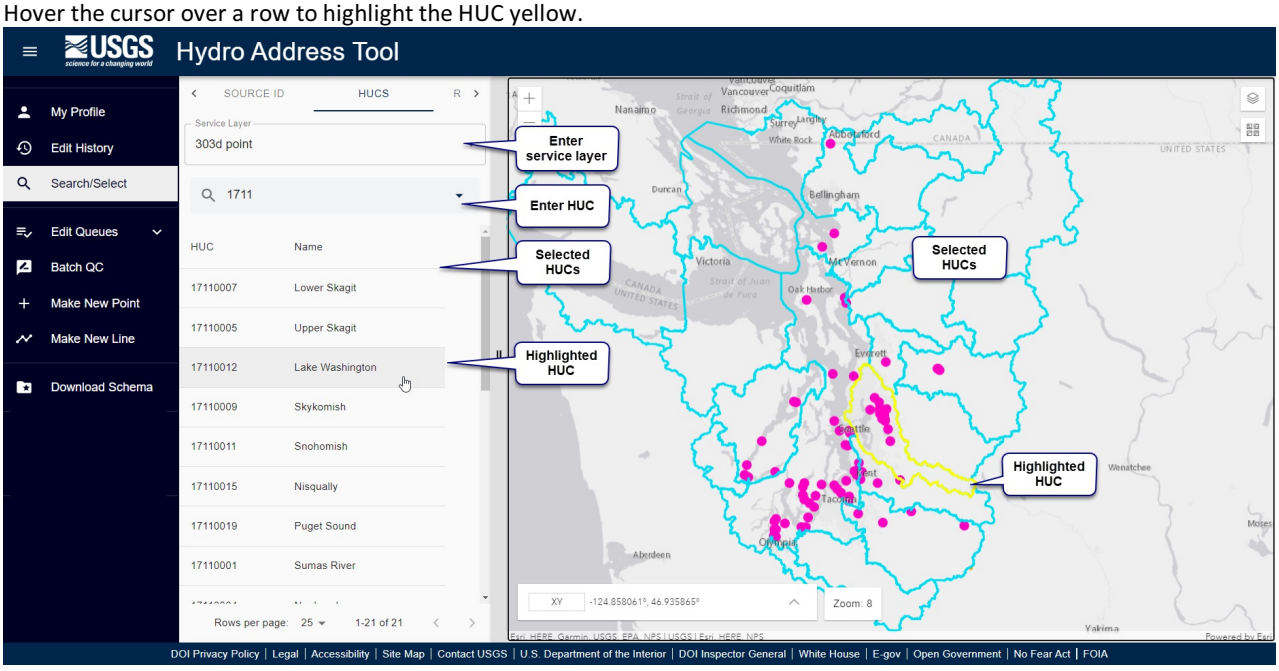
Search/Select by Hydrologic Unit

To select features by Hydrologic Units:

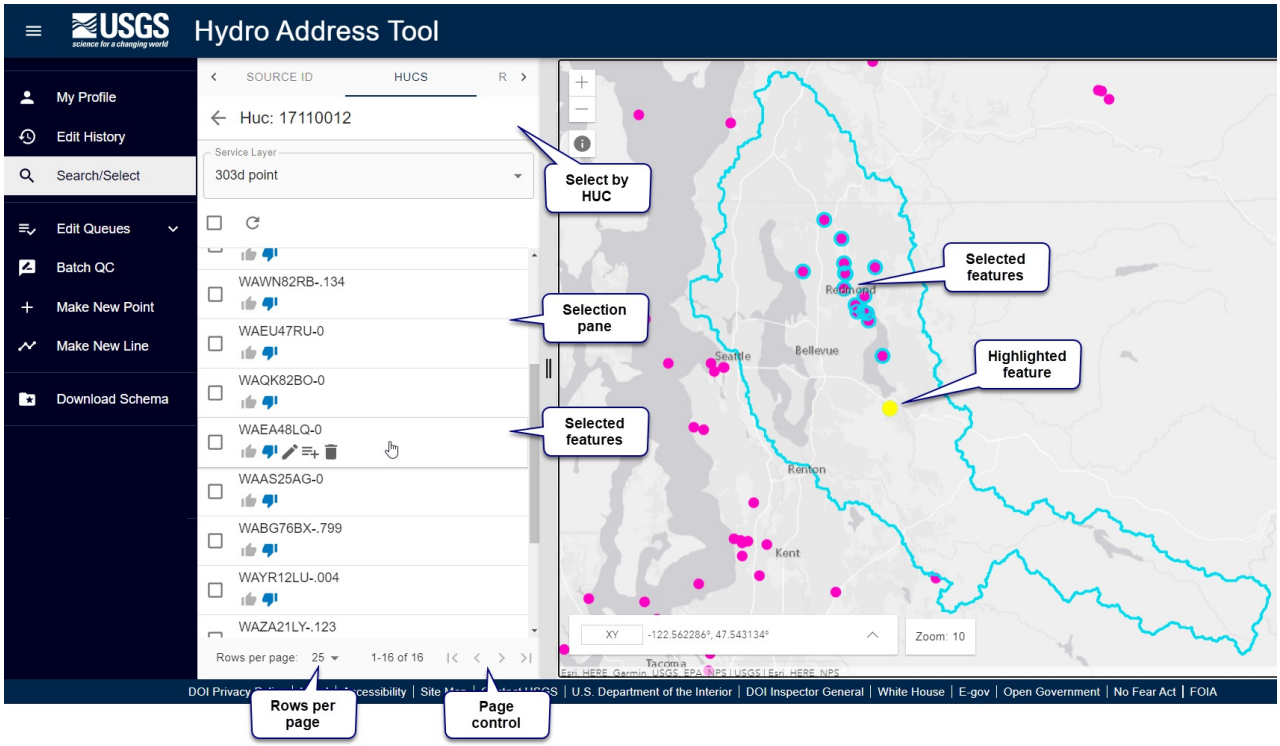
1 Select a service from the Service Layer drop down.
2 Select HUC size (HUC2, HUC4, HUC6, HUC8, HUC10, HUC12, or HUC16).
3 Enter a HUC in search bar.



4 HUCs appear in lower the half of Search/Select tab.
5 HUCs appear cyan on the map.
6 Hover the cursor over a row to highlight the HUC yellow.



7 Click a row to zoom to the HUC on the map.
8 Features contained in the HUC appear in the lower half of the Search/Select.
9 Mouse over a row to highlight the features yellow on the map.
10 Click a row to zoom to the feature on the map.

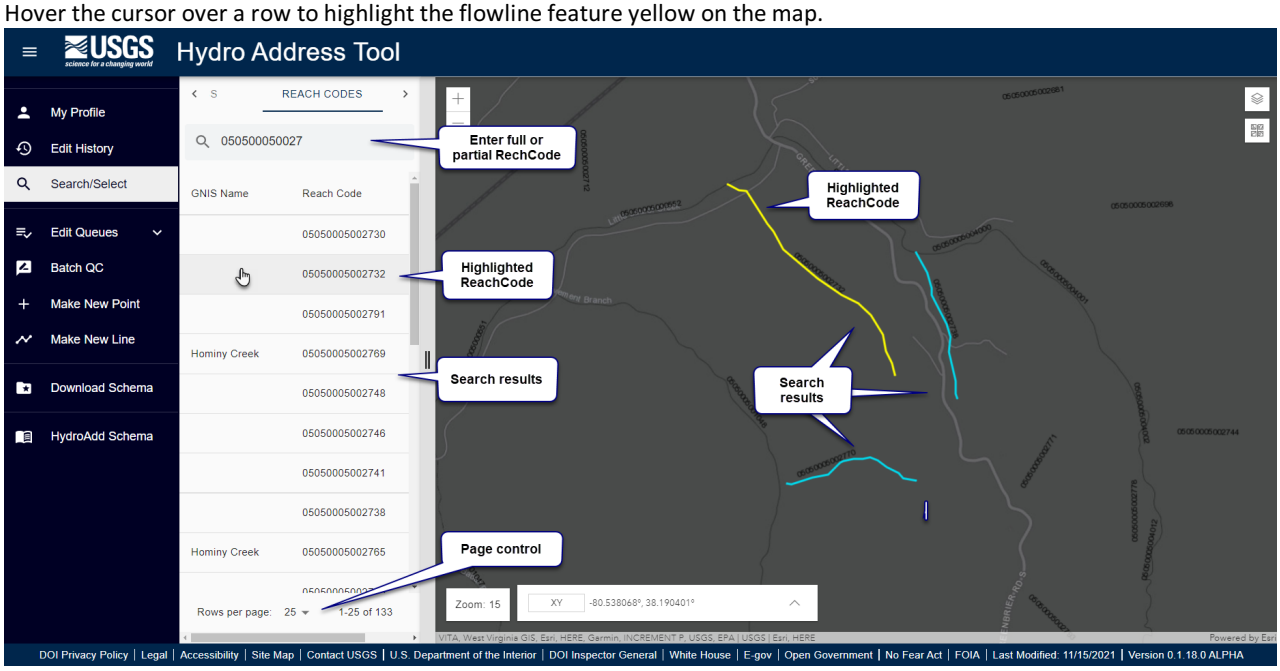


Find a ReachCode

Search by ReachCode does not search your service layer. Rather, HydroAdd searches for ReachCodes in the National Map NHD HR service layer. This function is a convenient way to find ReachCodes.

NOTE: you cannot make a selection from your service layer with ReachCodes. There are very many ReachCodes in the NHD, so this search can take a few minutes.

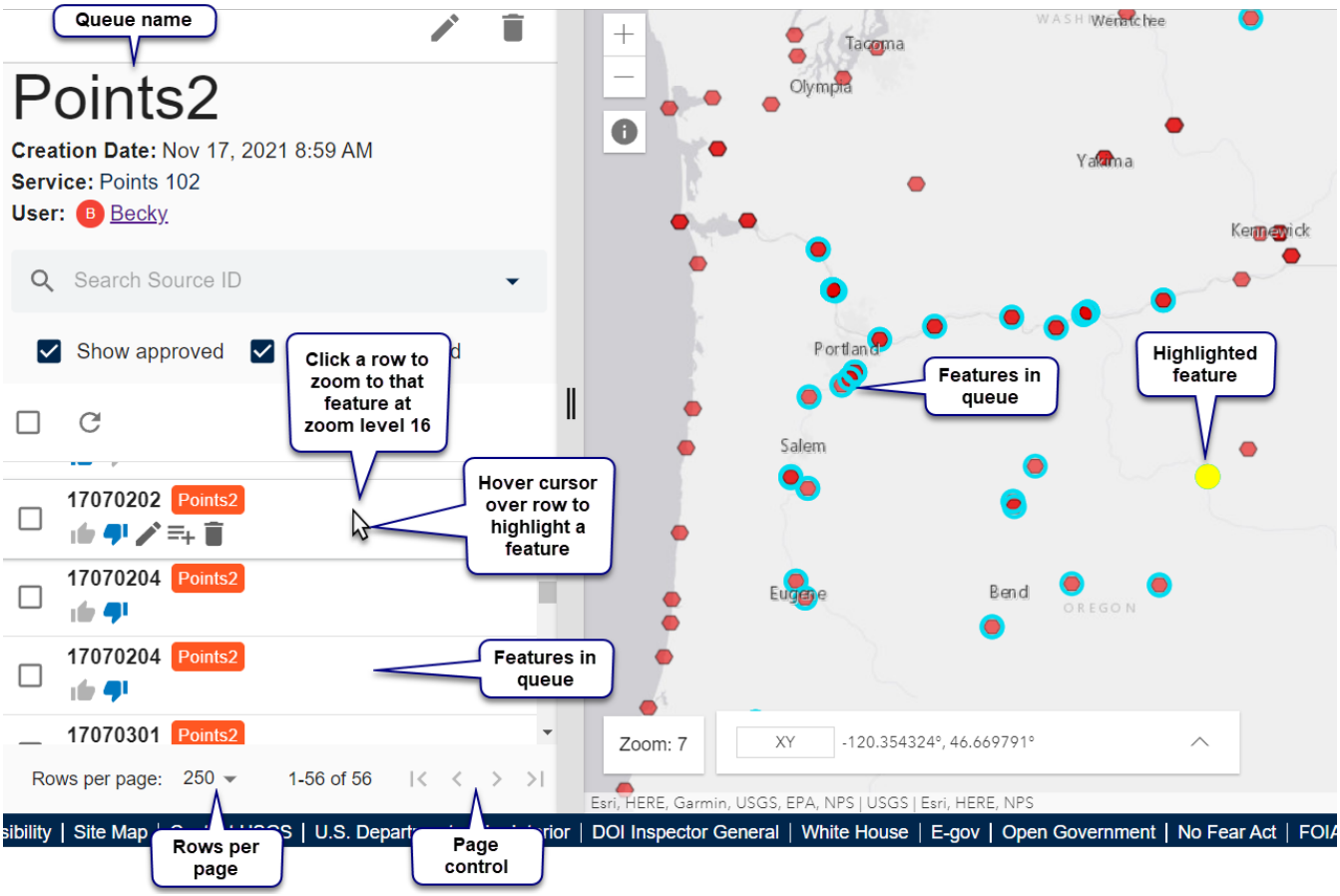
1 Type a full or partial ReachCode into the search bar.
2 HydroAdd filters ReachCodes based on the entry.
3 Flowlines list in the lower half of Search/Select pane.
4 Flowline features appear cyan on the map.
5 Hover the cursor over a row to highlight the flowline feature yellow on the map.



Edit Queues

A queue is convenient way to group items in your service layer for editing. For example, you could group items in your service layer by HUC or divide the editing workload between coworkers.

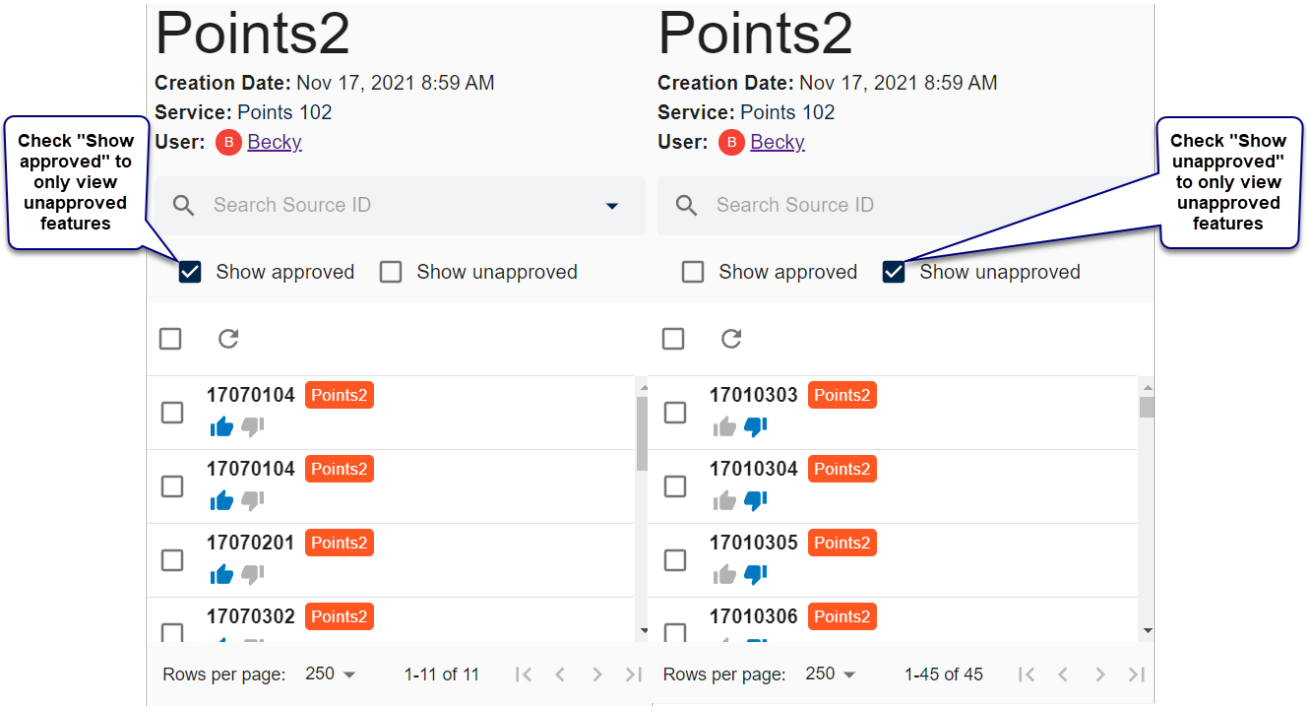
- Click a row in a queue to zoom to the feature at level 16. This allows you to inspect the feature before editing it.
- Items in a queue appear cyan on the map.
- Hover the cursor over a row to highlight features yellow on the map.
- Queues are paginated. You can choose the number of rows per page.



Show approved/show unapproved

The main advantage of using a queue is it drives you to unapproved features that need review.

Use the check boxes to view approved items, unapproved items, or both. Both check boxes are checked by default.

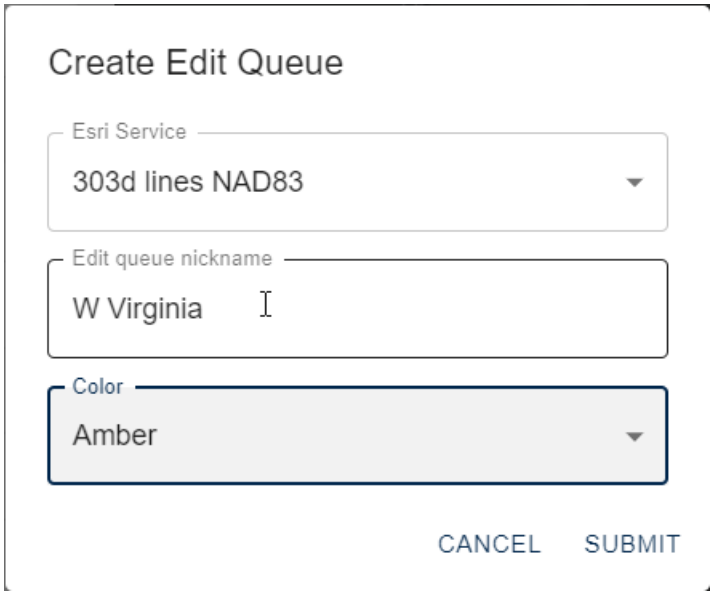


Make a new queue

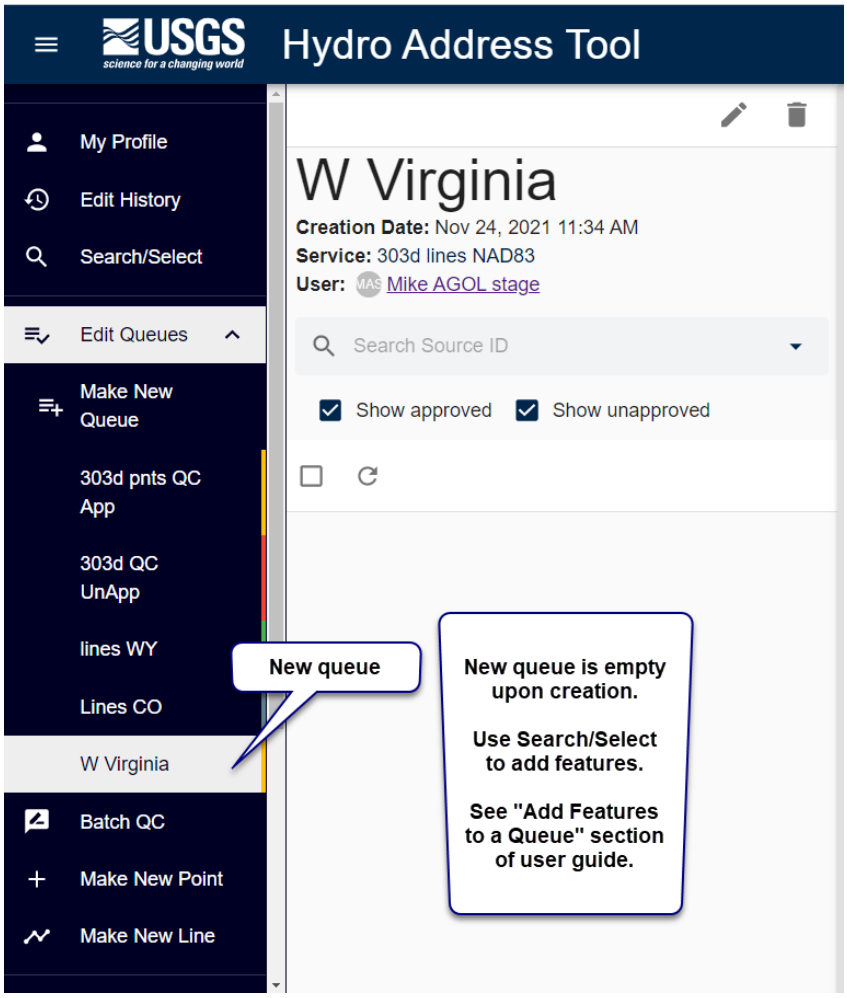
Queues can be made from Edit Queues, from a selection, or from an existing queue.

Make a new queue from Edit Queues

1 Go to Edit Queues > Make New Queue.
2 Create Edit Queue window appears.
3 Enter the service URL from AGOL, queue nickname, and choose a label color.
4 Click Submit.

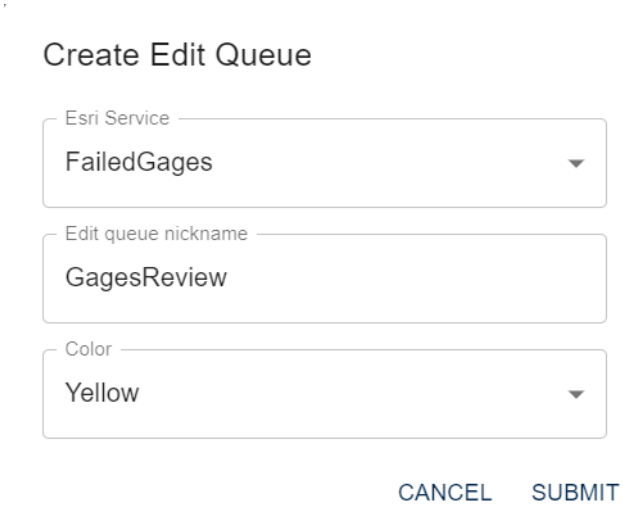


5 The new queue appears in Edit Queues
The new queue is empty upon creation.
Learn how to add features to a queue.

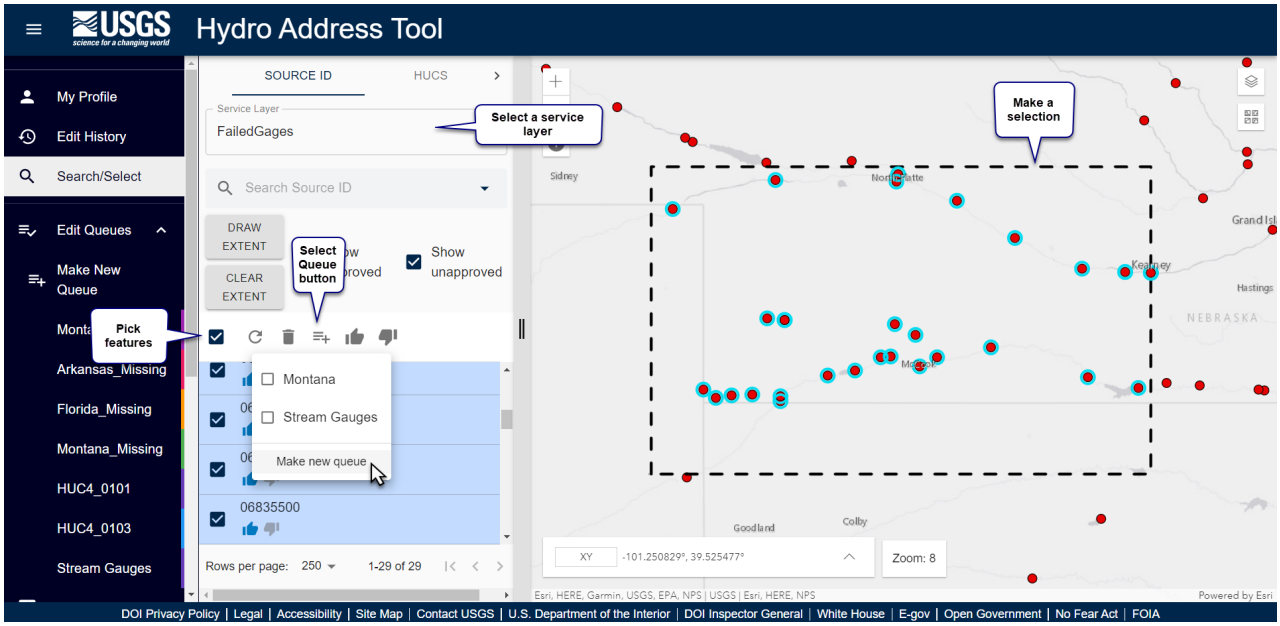


Make a new queue from a selection or existing queue

1 Hover the cursor over a row of a selection or existing queue, then click the Edits Queue button.
2 Click Make New Queue.
3 Enter Esri Service, Edit queue nickname, and choose a queue label color.

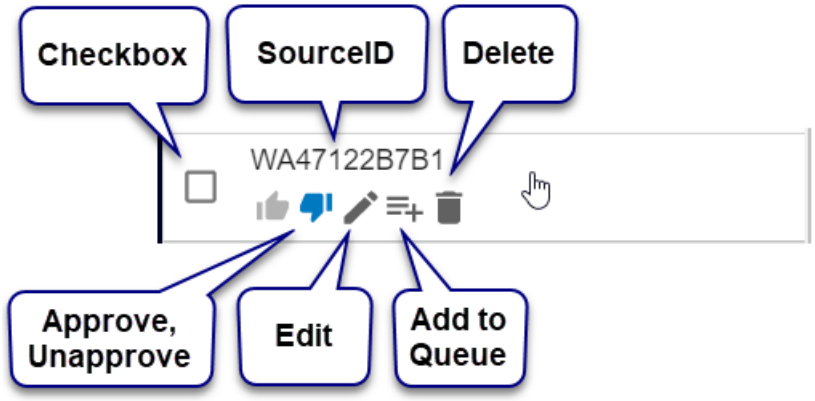


4 Click submit.
5 The new queue appears in Edit Queue.



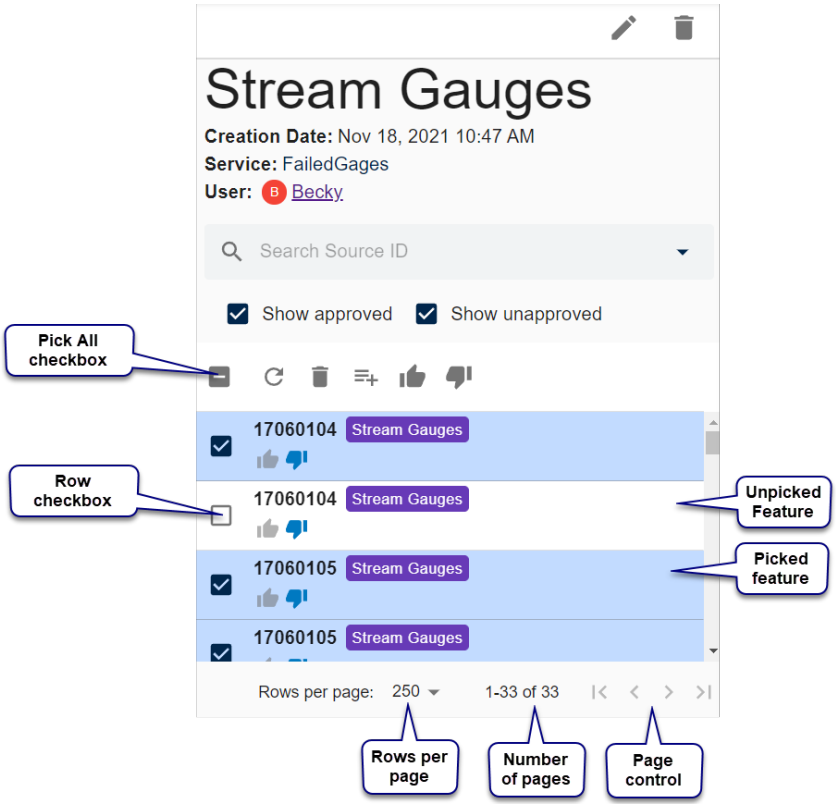
Queue row Functions

Click the row to zoom to the feature. Hover the cursor over a row to access the row buttons. Each row has a checkbox and five buttons: Approve, Unapprove, Edit, Add to Queue, and Delete.



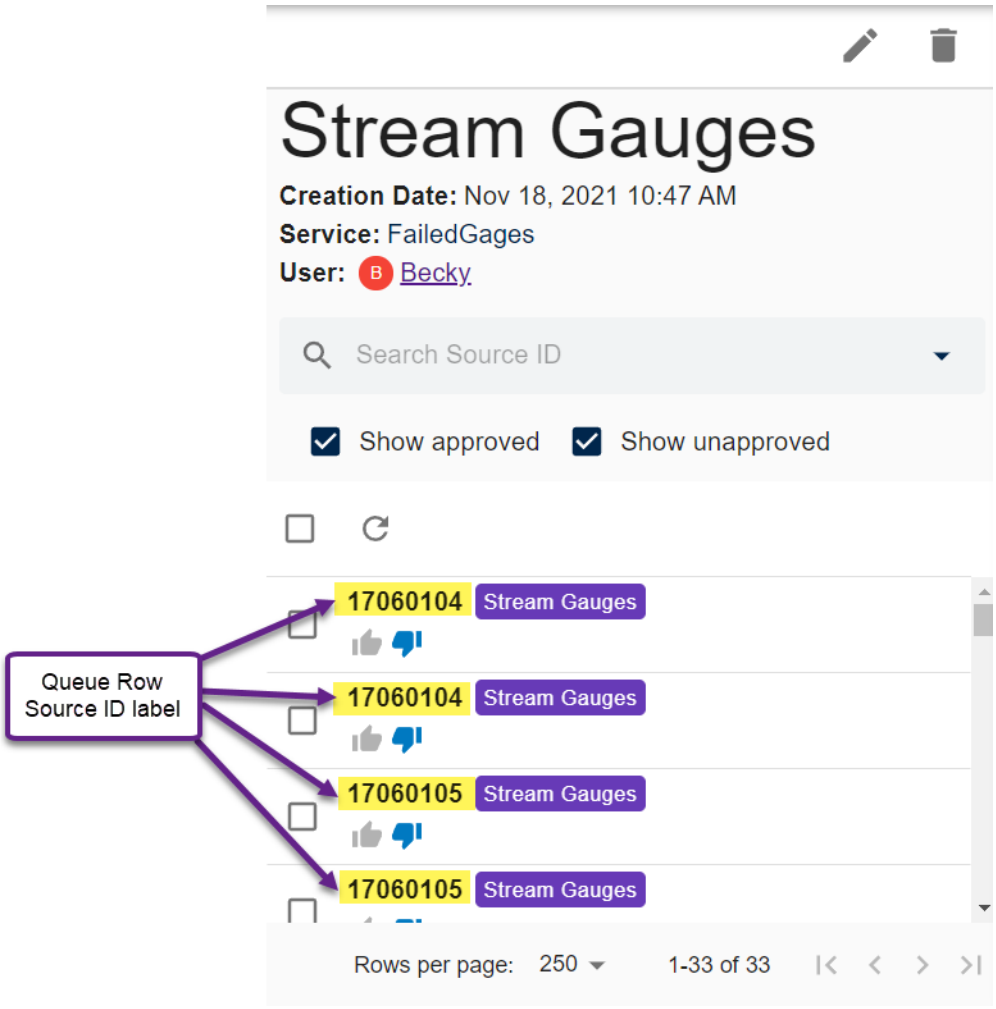
Queue row Checkbox

Use the Pick All checkbox to pick all rows on a page or use a row checkbox to pick single features. Only the features in the page will be picked. For example, if there are 10 rows in the Search/Select page, only 10 features will be picked. To pick more rows, increase the number of rows per page or go to the next page. Once you have picked multiple rows, you can delete, approve/unapprove, or add to/remove from a queue.



Queue row SourceID label

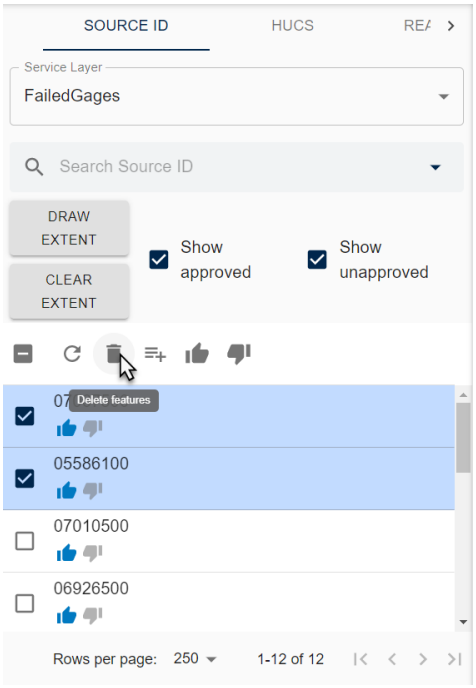
HydroAdd requires a SourceID as a unique identifier for all features in your service. Rows in a selection or queue show the SourceID. You normally assign SourceIDs to features in your service during schema preparation in ArcGIS Pro. If a feature does not a have a SourceID, HydroAdd requires you to enter one to save your edits. Likewise, new features must have a SourceID to save.



Queue row Delete button

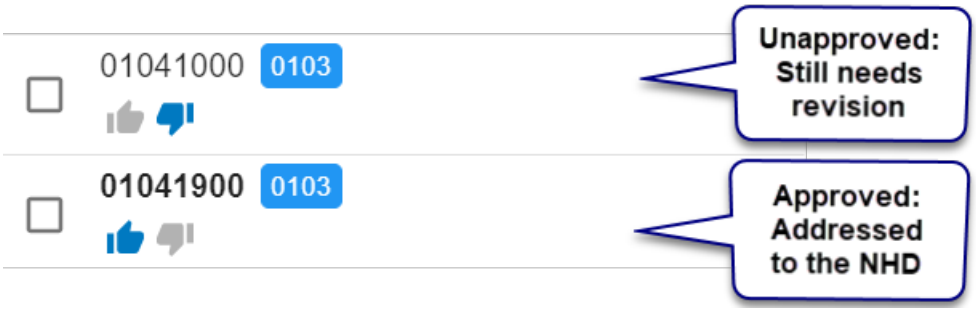
Delete permanently removes a feature from your service layer. To delete a single feature, hover the cursor over a row and click the delete button.

To delete multiple features, use the checkbox to pick the features you want to delete.

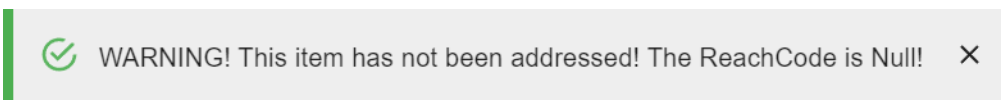


Queue row Approve, Unapprove buttons

Features have two statuses: approved and unapproved. Click the thumbs up button to approve a feature. Click thumbs down button to unapprove.



In general, approved features are addressed to the NHD, which means they have a ReachCode and Measure. However, HydroAdd does not strictly require approved features to be addressed. It is possible to approve features that have not been addressed. HydroAdd will warn you if you approve or save a feature that has not been addressed but does not disallow it.

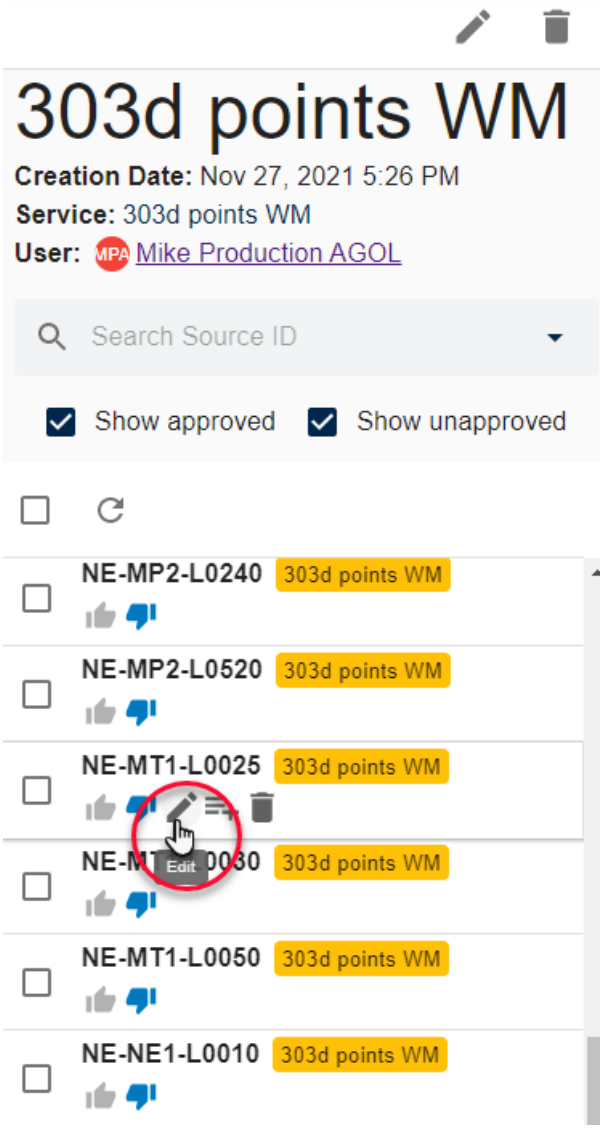


Queue row Edit button

Click the edit button to edit a feature. When you click the edit button, the editing pane opens, and the editing crosshair cursor appears on the map.

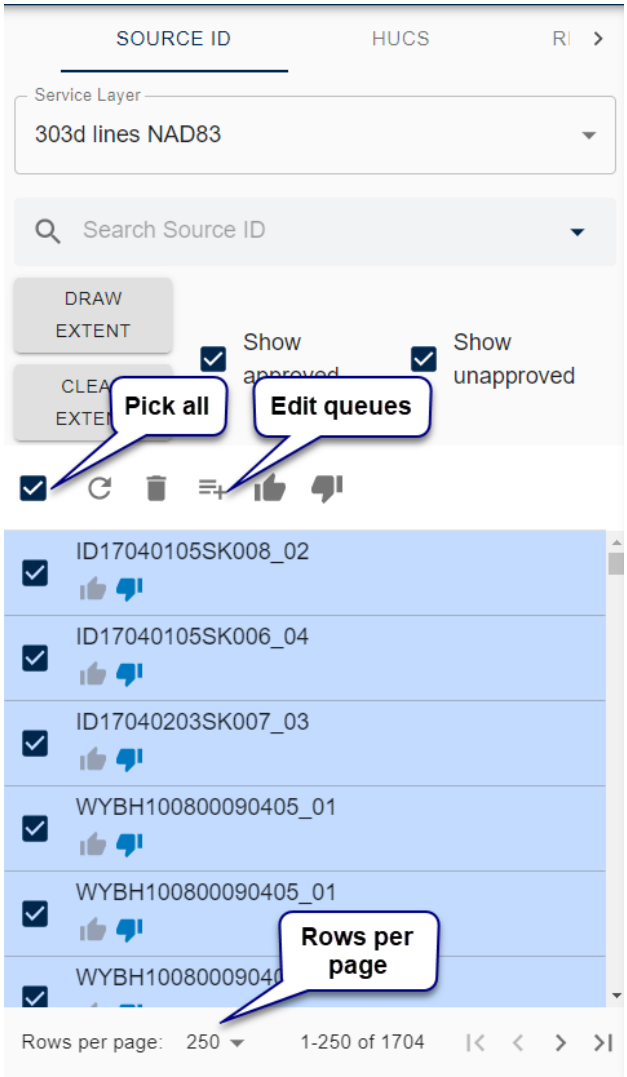
Click a row in a selection or queue to zoom to the feature at level 16. This allows you to inspect the feature in the map before opening it for editing.

Learn more about Editing.

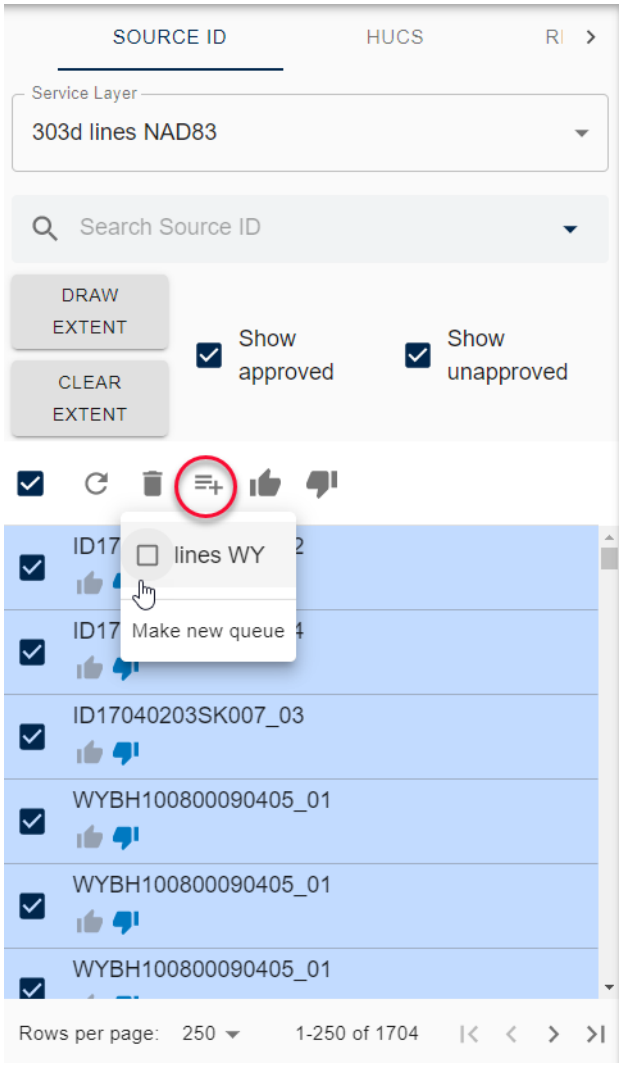


Add Features to a Queue

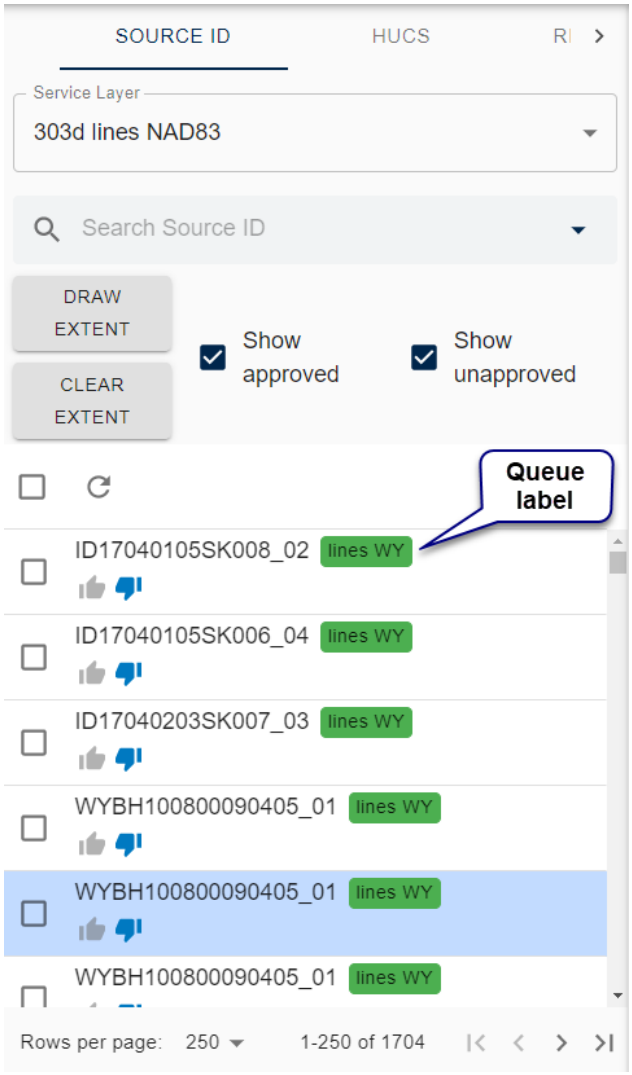
1 Pick a single item from a selection or existing queue, or pick multiple items using the Pick All checkbox.
   a NOTE: The Pick All check box selects only the rows in the page
   b You many need to increase the number of items per page to ensure all the features in your selection are added to the queue.
2 Click Edit Queues button.



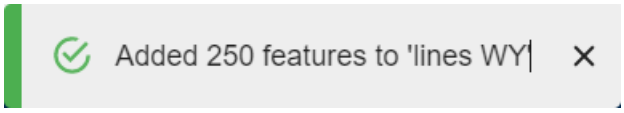
3 From the popup, pick an existing queue or make a new queue.



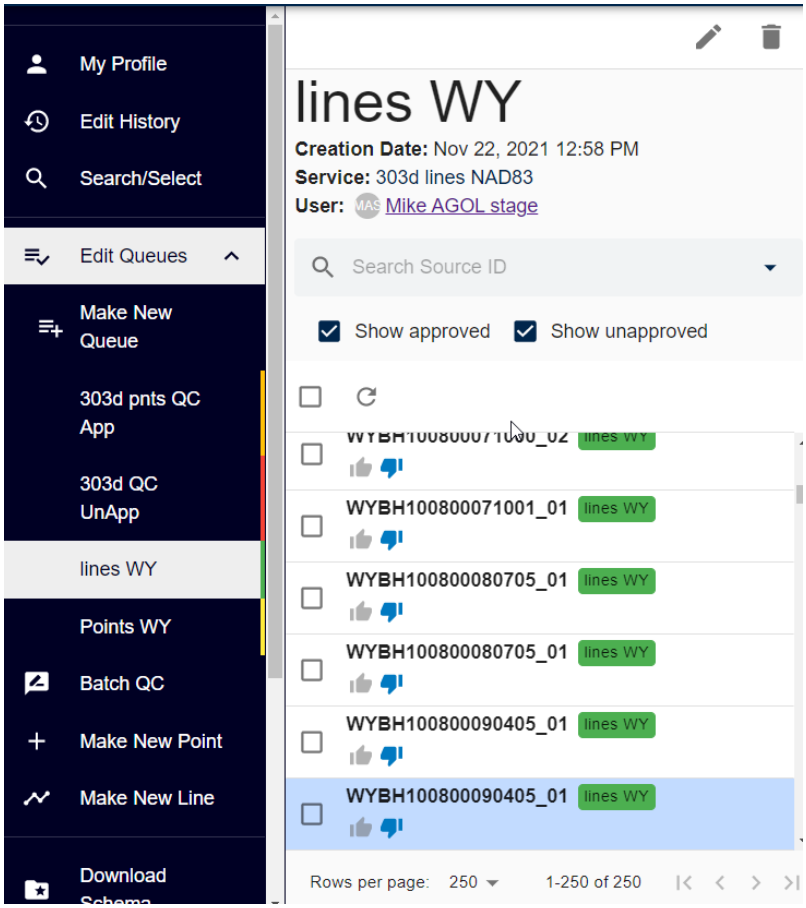
4 The queue label appears in the rows.



5 Popup, lower right, indicates features are added to the queue.

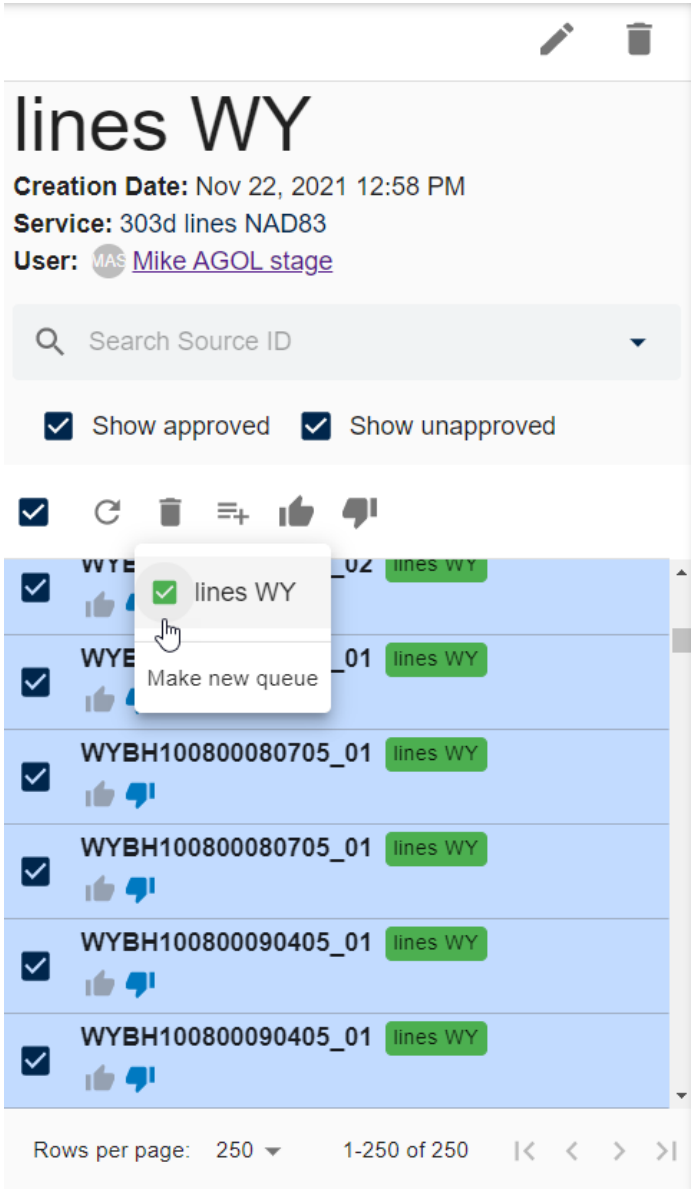


6 Click the queue name in the far-left pane to view the items in the queue.

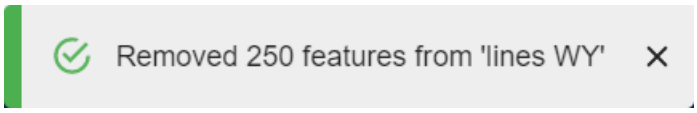


Remove features from a Queue

1 Click a queue name in the far-left pane to view the items in the queue.
2 Pick a single item from the queue, or pick multiple items using the Pick All checkbox.
    a NOTE: The Pick All check box selects only the rows in the page
    b You many need to increase the number of items per page to ensure all the features in your selection are added to the queue.
3 Click Edit Queues button.
4 A popup appears showing available queues.
5 Uncheck the queue.



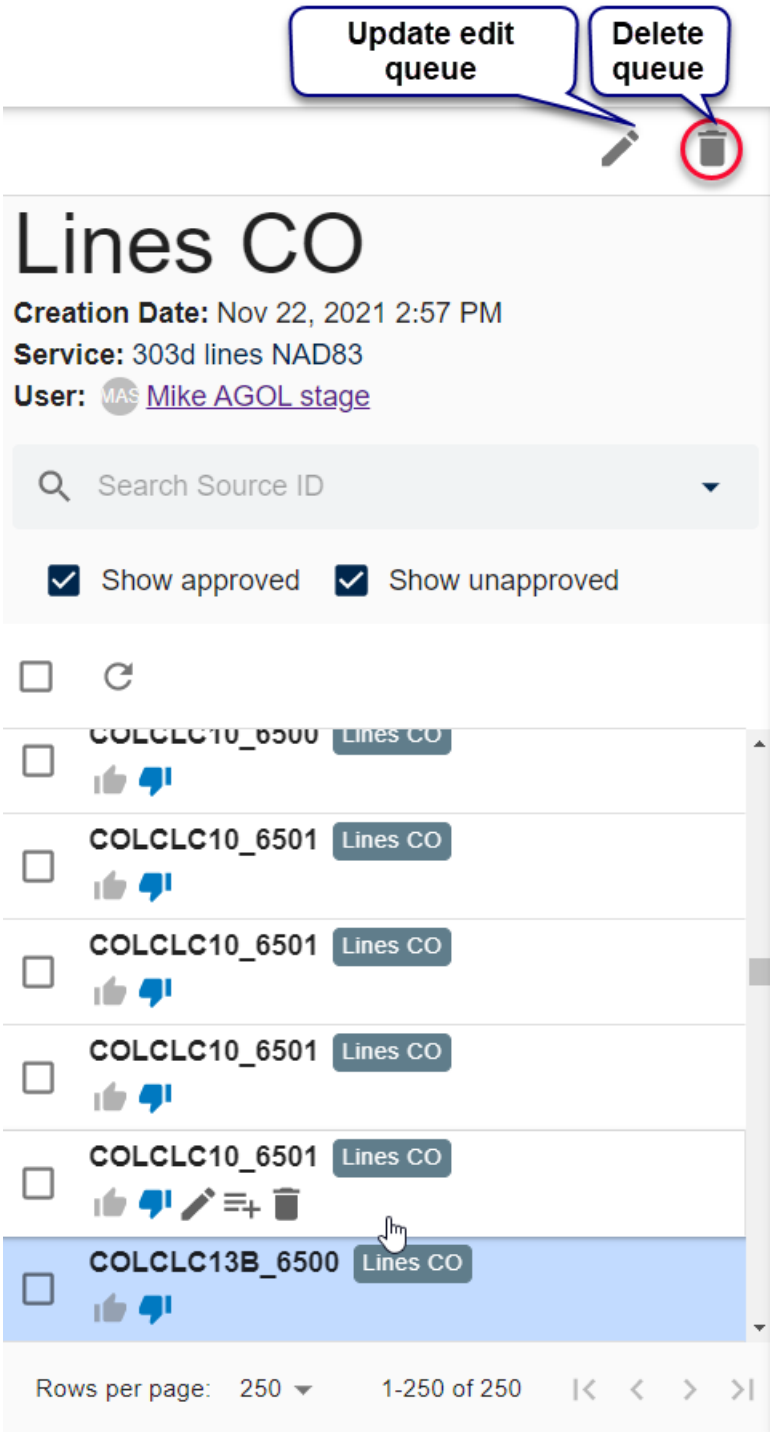
6 The queue label disappears from the rows of the picked features.
7 The popup, lower right, indicates the features are removed from the queue.



Delete a queue

Deleting a queue does not delete any features from the service layer—it just deletes the queue from HydroAdd interface.
This action cannot be undone. If you accidentally delete a queue, you will need to make a new queue and add feature to it again.

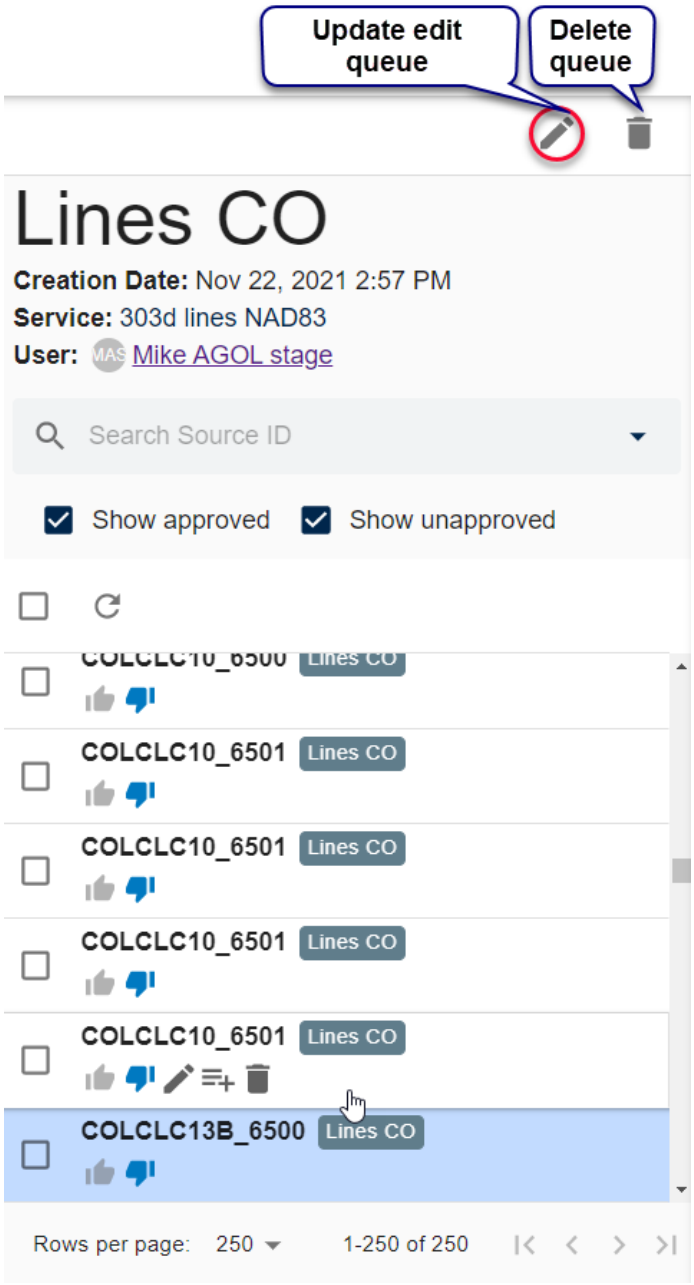
1 Click a queue name in the far-left pane to view the items in the queue.
2 Click the Delete Queue button at the top of the queue pane
3 The queue is deleted.



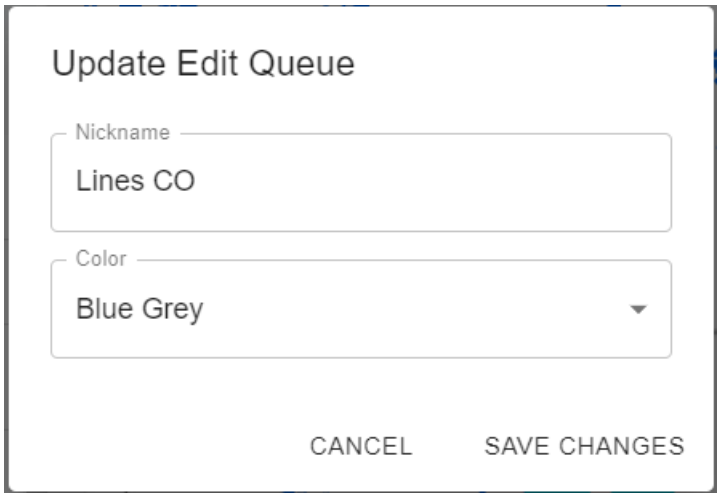
Update a queue label

You can change the name of a queue and label color any time. This does not affect any of the features in the queue.

1 Open the queue.
2 Click Update Edit Queue button at the top of the queue pane.



3 The Update Edit Queue window pops up. Update the label name and color as needed.



Editing Overview

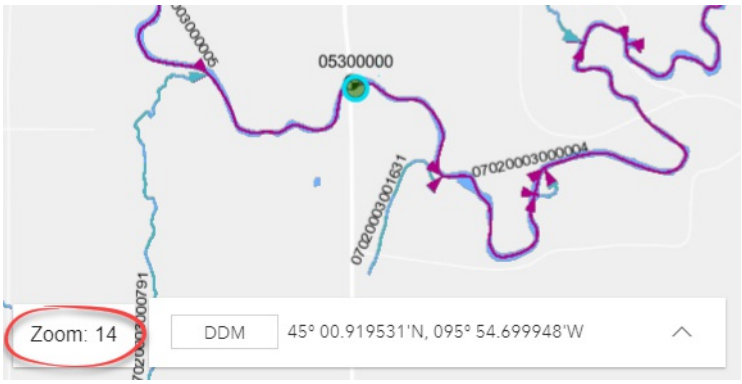
HydroAdd allows you address existing points and lines in your service to NHDFlowline. Addressing of polygons to NHDWaterbody will be added soon.

The map must be at zoom level 14 to edit a feature.

Open a feature for editing

There are two ways to open a feature for editing:

- Click the Edit button in the row of a selection or queue, or
- Click directly on the feature in the map with the regular arrow cursor.



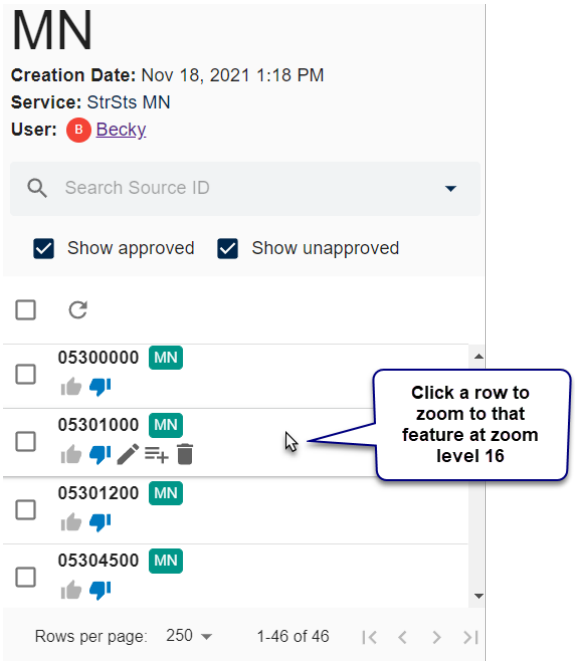
Learn more about editing points.

Learn more about editing lines.

Rows

- Both selections and queues have rows.
- Click a row in a selection or queue to zoom to the feature at level 16.

This allows you to inspect the feature in the map before opening it for editing.



Learn more about Queue row functions.

Learn more about Selection row functions.

Learn more about Edit Queues.

Learn more about Search/Select.

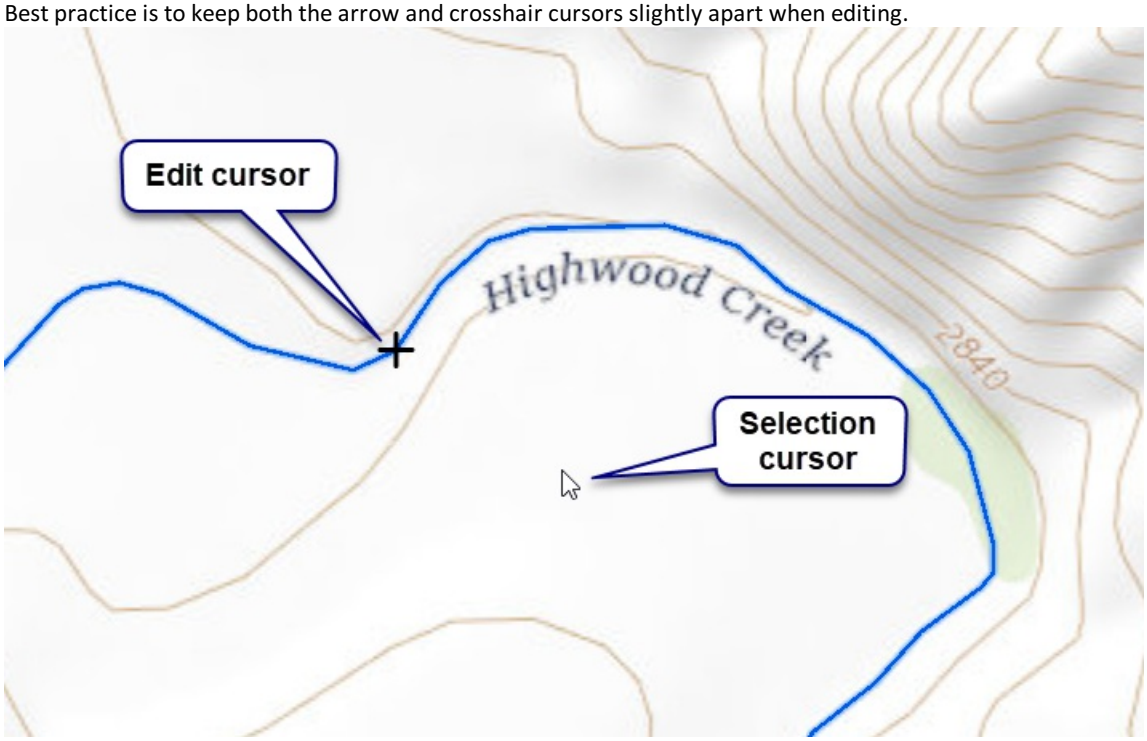
Learn more about editing points.

Learn more about editing lines.

Cursors

HydroAdd has two kinds of cursors: the editing cursor + and the selection cursor .

- The crosshair cursor + is the editing cursor. It is visible only when a feature is open for editing.
- The map must be at zoom level 14 to edit a feature.
- The regular arrow cursor is a selection cursor. Use the arrow cursor to select features from your service layer.
- The crosshair follows the arrow cursor, but the crosshair is always snapped to the nearest flowline. The crosshair cursor can only sit on flowlines.
- Pay attention to where both cursors are when you are editing. It is possible to accidentally select a different feature than you intended!
- Best practice is to keep both the arrow and crosshair cursors slightly apart when editing.



Learn more about editing points.

Learn more about editing lines.

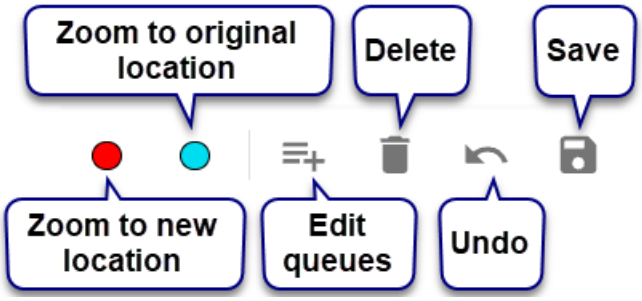
Edit Pane Functions

The Edit pane opens when a feature is opened for editing.

The Edit pane displays the entire HydroAdd schema, plus any additional fields you may have added to your service layer.

- To open a feature for editing, click the Edit button in the row of a selection or queue, or click directly on the feature in the map.

There are six buttons at the top of the Editing pane: Zoom to new location, Zoom to original location, Edit queues, Delete, Undo, and Save.



Zoom to new location

Zooms the map to the newly addressed location.

Zoom to original location

Zooms the map to the original location.

Edit queues

Allows add or remove items from a queue.

Delete

Deletes the item directly from your service layer at AGOL.

Undo

Undoes the most recent edit before Save. Cannot undo after Save.

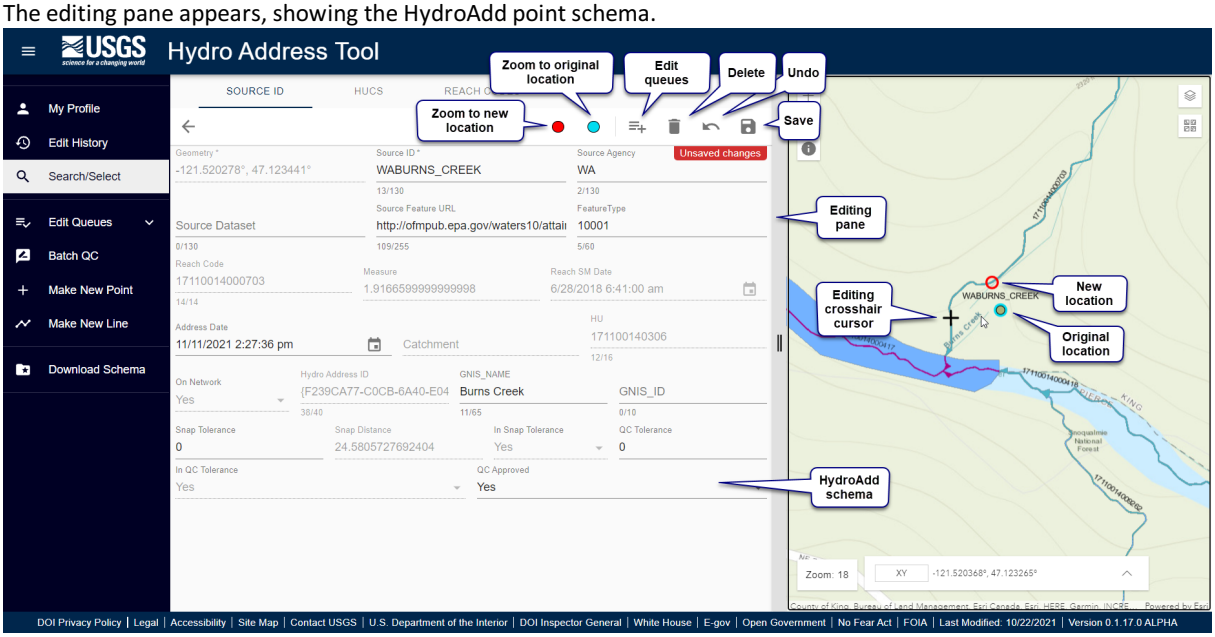
Save

Saves the most recent edit. Item must have a SourceID to save. Cannot undo after Save.

Learn more about editing at Editing Overview.

Editing Points

1 Open a point feature for editing.
  a The selected point appears in the map with cyan halo.
  b At zoom level 14 or greater, the editing crosshair cursor appears in the map.
  c The editing pane appears, showing the HydroAdd point schema.



2 Position the edit crosshair cursor on a flowline; Click once.
  a A red halo appears at the new location.
  b HydroAdd updates the ReachCode, Measure, GNIS_NAME, GNIS_ID, HU, Catchment, Address Date, SnapDistance, QCApproved, and other QC fields.
3 Adjust the location of the point by clicking again. You can adjust the location as many times as necessary. The location is not final until you save.
4 Update the SourceID, SourceDataset, SourceFeatureURL, and FeatureType.
  a SourceID cannot be Null. If SourceID is Null, the item cannot be saved.
5 Click the save icon in the upper right side of the editing pane.
6 Confirmation popup indicates feature is saved.

Learn more about editing at Editing Overview.

Editing Lines

HydroAdd lines are always “single reach” (also known as “single route”). HydroAdd cannot draw “multi-reach” (also known as “multi route”) lines.

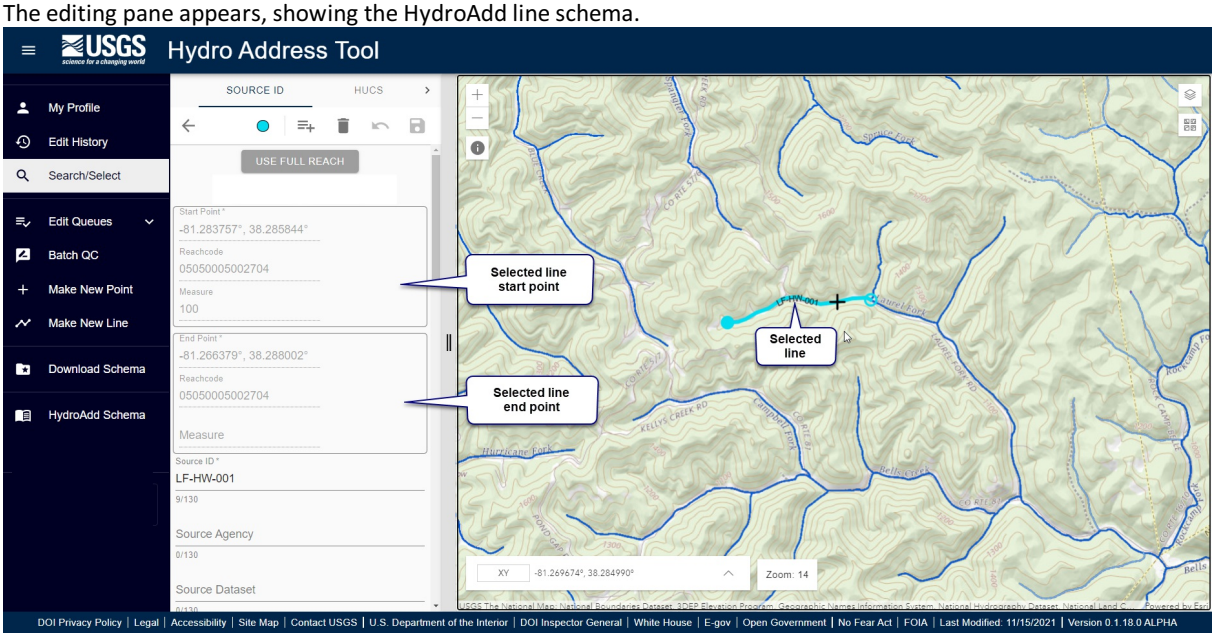
- This means that any lines you draw with HydroAdd cannot be longer than a ReachCode.
- You can draw multiple and/or overlapping lines on a single ReachCode, but the lines geometry cannot extent beyond either end of the ReachCode.
- If you draw a line that has start and end points on different ReachCodes, HydroAdd automatically cuts the line at the ReachCodes, creating one line for each ReachCode.

Option to use full reach

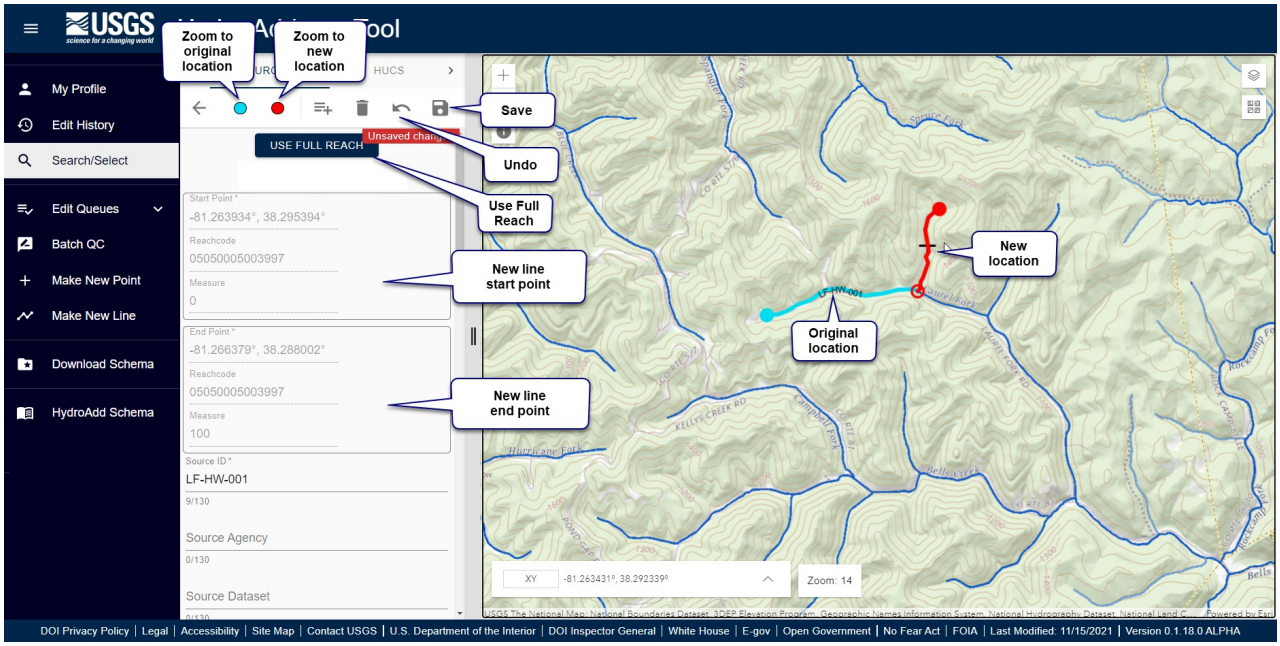
When “Use Full Reach” is on, you can make a line that spans the entire ReachCode with just one click. The new line spans the entire ReachCode, from measure 0 to measure 100. The measure is always a number between 0 and 100-- downstream 0 and 100 being upstream. In the NHD HR model, the From Measure is always upstream--the larger measure, while the To Measure is always downstream--the smaller measure. Measure can be thought of as a "percent upstream" on a ReachCode.

Use Full Reach is a convenient way to move a line to a different ReachCode.

1 Open a line feature for editing.
  a The selected line appears in the map in cyan.
  b At zoom level 14 or greater, the editing crosshair cursor appears in the map.
  c The editing pane appears, showing the HydroAdd line schema.



2 Turn on “Use Full Reach” button.
3 Click once on a ReachCode.
4 After a moment, the updated line appears in red, spanning the ReachCode from measure 0 to measure 100.
5 Update the SourceID, SourceDataset, SourceFeatureURL, and FeatureType.
  a SourceID cannot be Null. If SourceID is Null, the item cannot be saved.
6 Click the save icon in the upper right side of the editing pane.

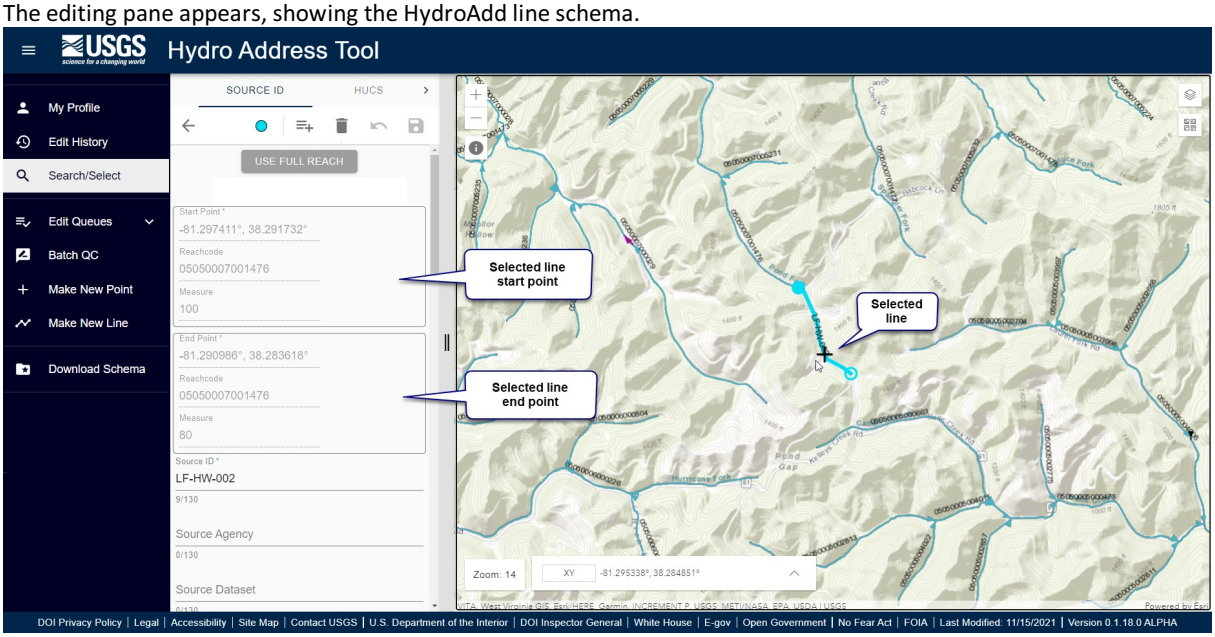


Learn more about editing at Editing Overview.

Option to use partial reach

When “Use Full Reach” is off, you must click both the start and end points of the new line. The measure is always a number between 0 and 100-- downstream 0 and 100 being upstream. In the NHD HR model, the From Measure is always upstream--the larger measure, while the To Measure is always downstream--the smaller measure. Measure can be thought of as a "percent upstream" on a ReachCode.

1 Open a line feature for editing.
- a The selected line appears in the map in cyan.
- b At zoom level 14 or greater, the editing crosshair cursor appears in the map.
- c The editing pane appears, showing the HydroAdd line schema.



2 Turn off “Use Full Reach” button

3 Click once to make the new start point of the line.
- a A red halo appears at the new start point location.
- b HydroAdd updates the ReachCode, FromMeasure, FromSnapDistance, ToSnapDistance, GNIS_NAME, GNIS_ID, and other QC fields.

4 Click a second time to make the new end point of the line.
- a If the end point is on a different ReachCode than the start point, HydroAdd creates multiple lines—one line for each ReachCode.

b Different ReachCodes are indicated by points

5 Adjust the line by clicking again. You can adjust the line as many times as necessary. The line is not final until you save.

6 Consecutive clicks cycle through the start and end points. For example:

a First click makes the start point of the line.

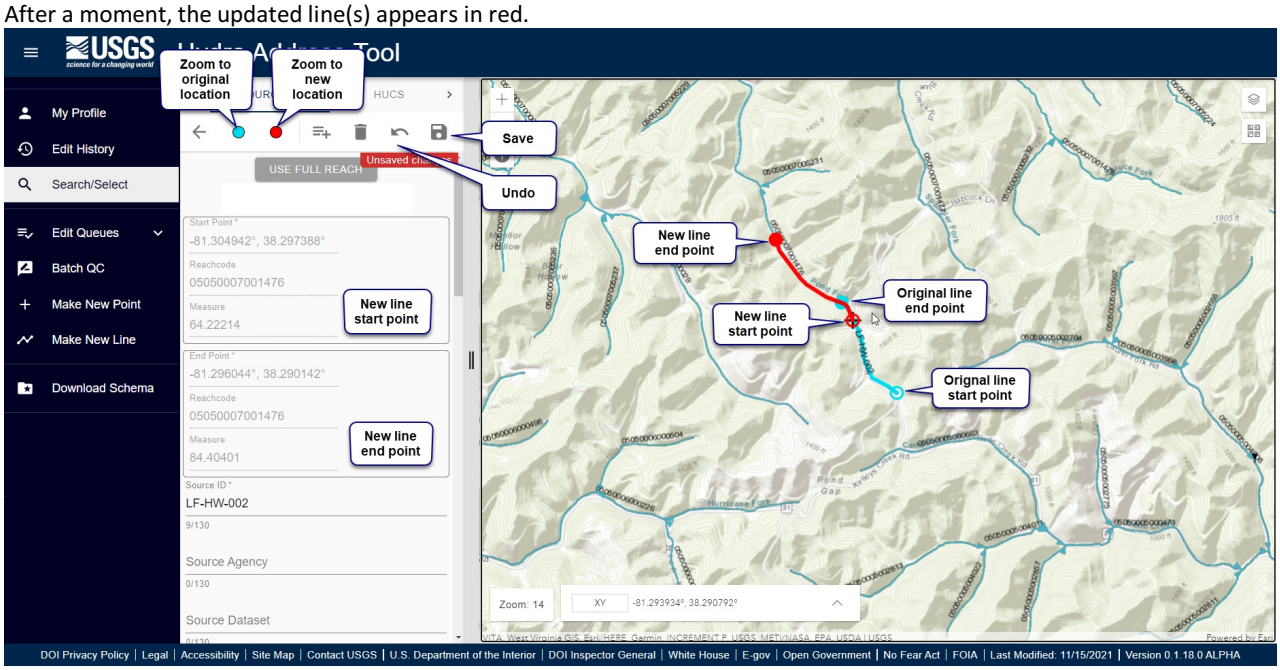
b Second click makes the end point of the line

c Third click makes a new start point.

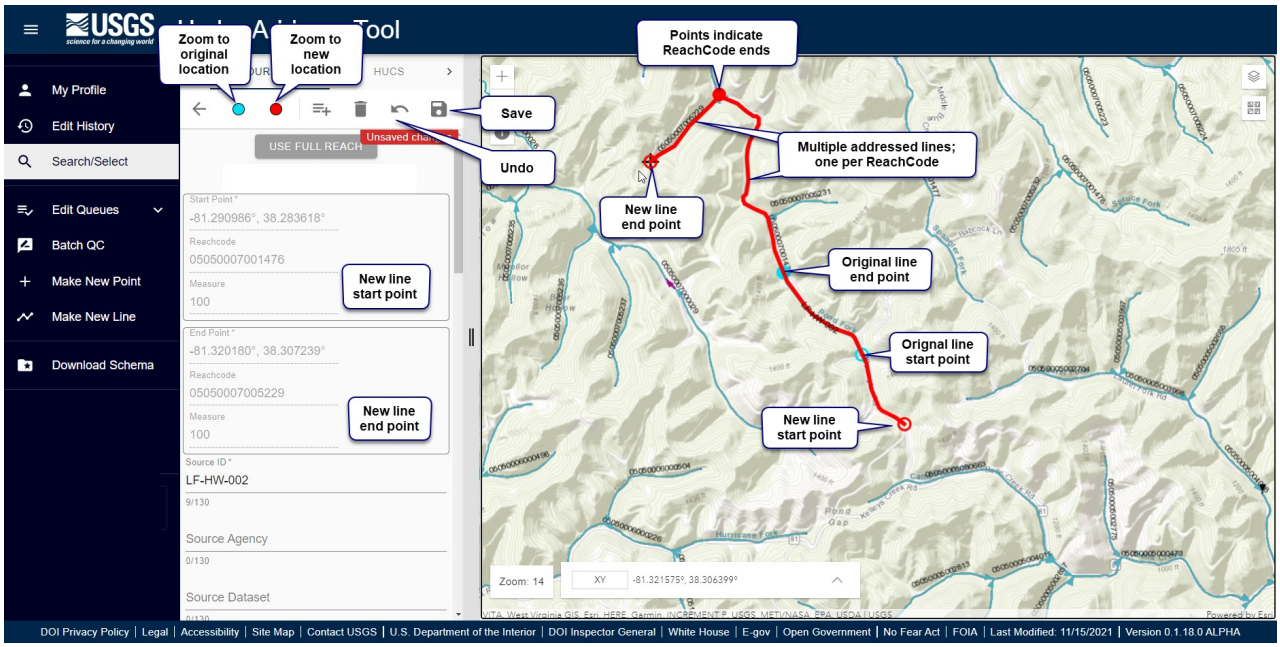
d Fourth click makes a new end point.

e Fifth click makes a new start point, and so on…

7 After a moment, the updated line(s) appears in red.



8 If the end point is on a different ReachCode than the start point, HydroAdd creates multiple lines—one line for each ReachCode.



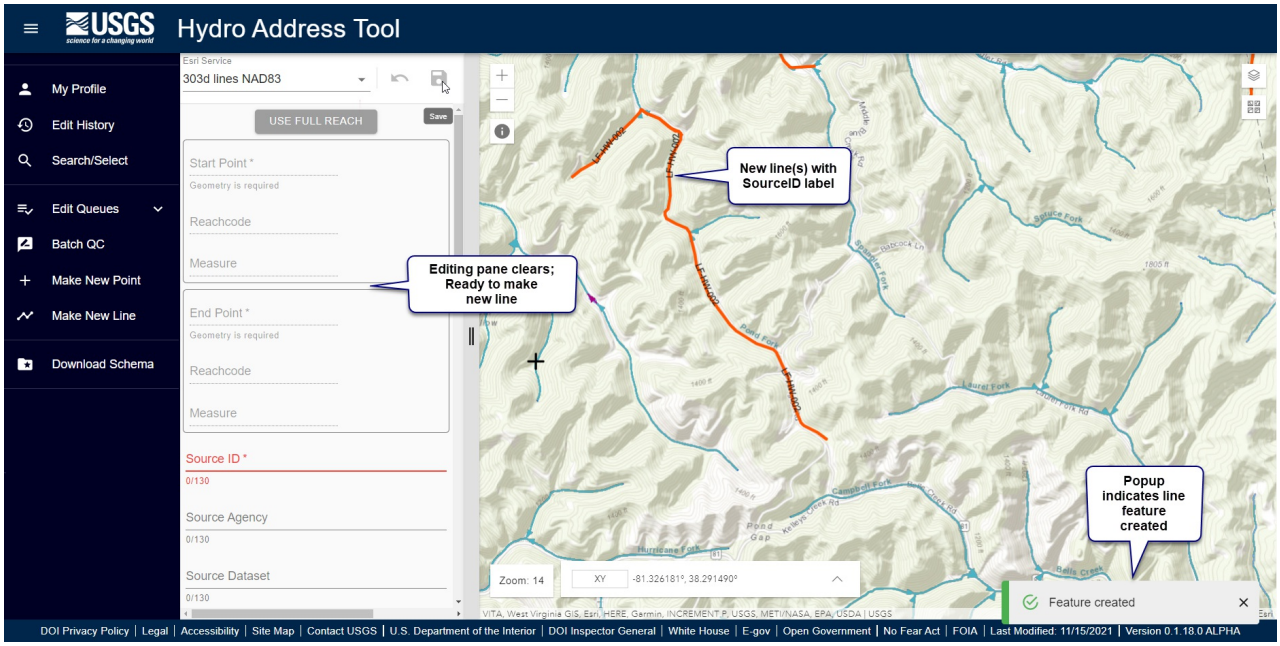
9 Update the SourceID, SourceDataset, SourceFeatureURL, and FeatureType.

a SourceID cannot be Null. If SourceID is Null, the item cannot be saved.

b If there are multiple lines, each line has will have the same SourceID—and if you entered them—SourceDataset, SourceFeatureURL and FeatureType.

10 Click the save icon in the upper right side of the editing pane.

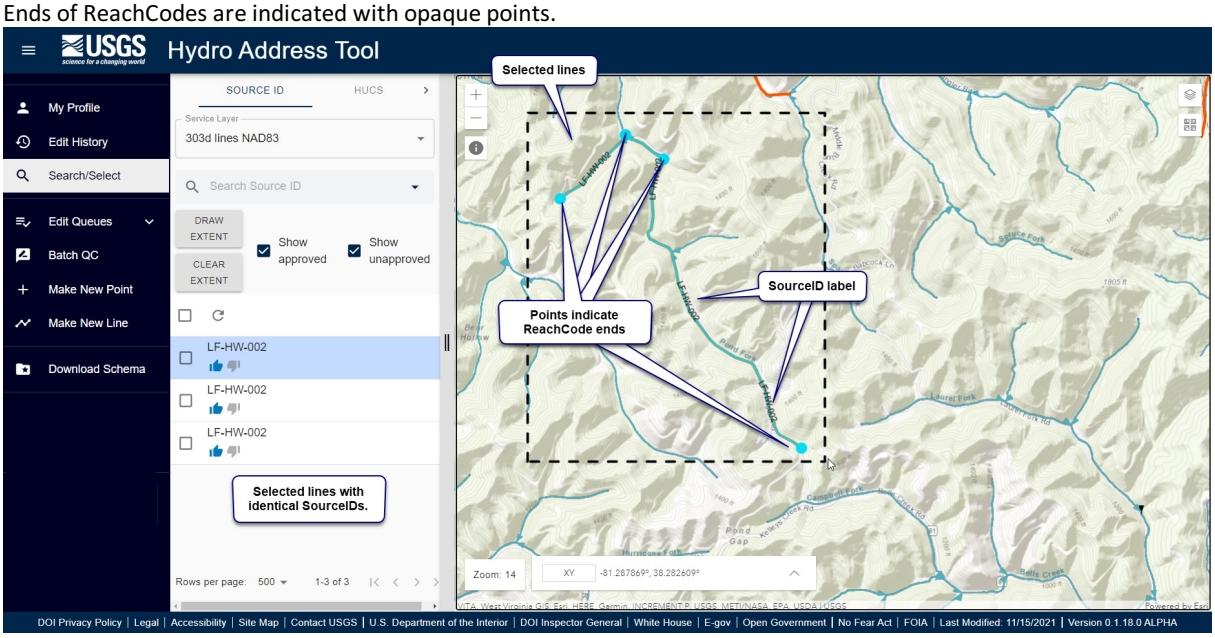
11 Confirmation popup indicates feature created.



12 You can confirm creation of multiple line events by selecting the new lines.

a If there are multiple lines, each line has the same SourceID—and if you entered them—SourceDataset, SourceFeatureURL and FeatureType.

b Ends of ReachCodes are indicated with opaque points.

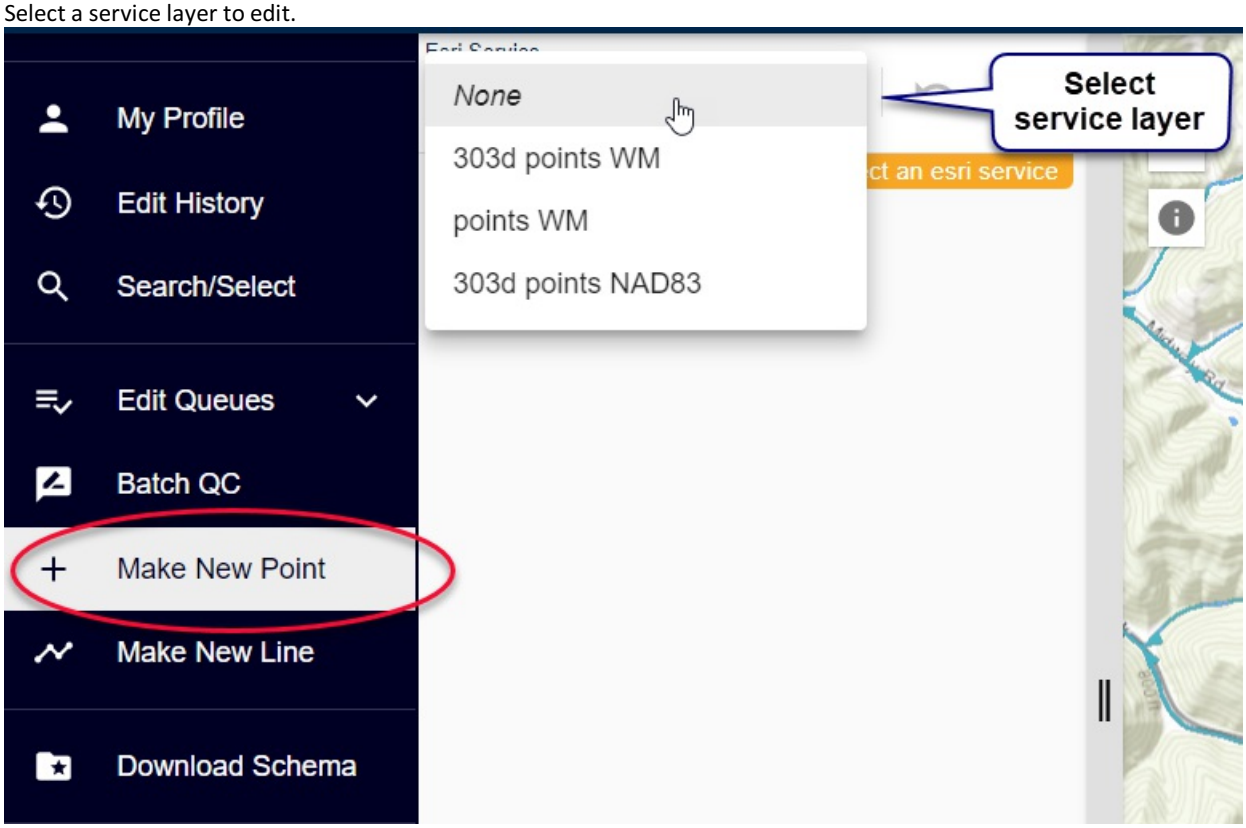


Learn more about editing at Editing Overview.

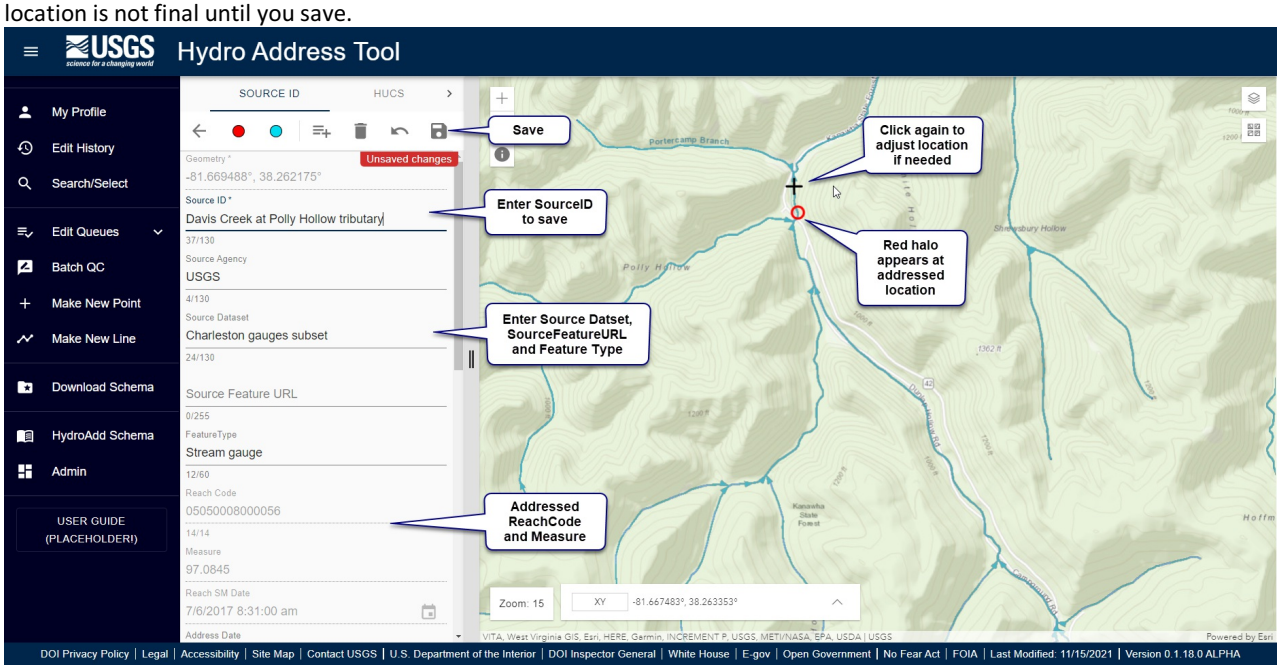
Make new points

Must be at zoom level 14 to edit.

1 Click Make New Points
2 Select a service layer to edit.

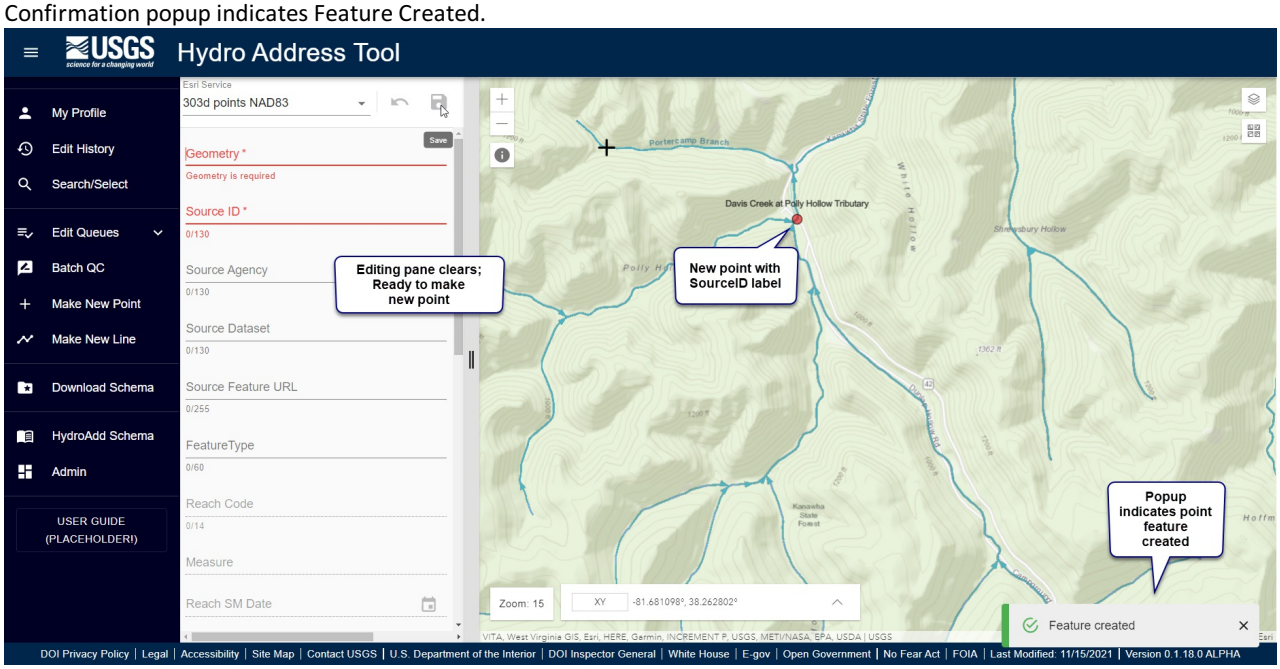


3 Position the edit crosshair cursor on a flowline; Click once.
  a A red halo appears at the location.
  b HydroAdd updates the ReachCode, Measure, GNIS_NAME, GNIS_ID, HU, Catchment, Address Date, SnapDistance, QCApproved, and other QC fields.
4 Update the SourceID, SourceDataset, SourceFeatureURL, and FeatureType.
  a SourceID cannot be Null. If SourceID is Null, the item cannot be saved.
5 You can adjust the location of the point by clicking again. You can adjust the location as many times as necessary. The location is not final until you save.



6 Click the save icon in the upper right side of the editing pane.

7 Confirmation popup indicates Feature Created.



Learn more about editing at Editing Overview.

Make new lines

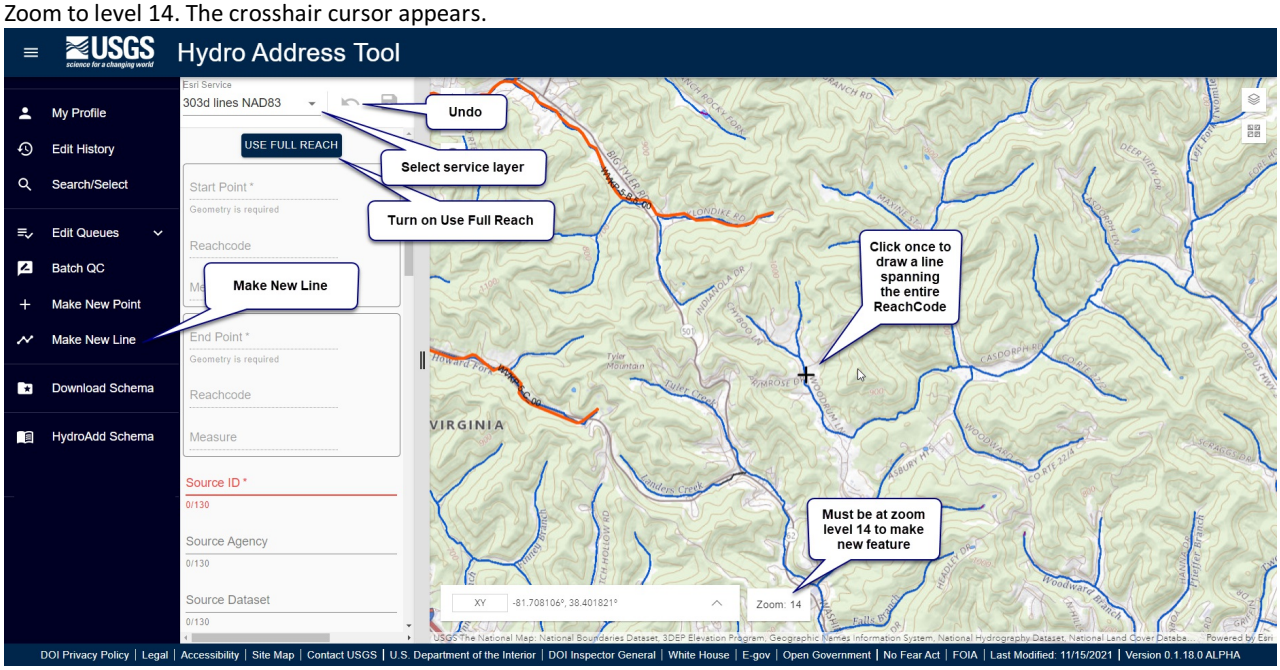
HydroAdd lines are always “single reach” (also known as single route). HydroAdd cannot draw “multi-reach” (multi route) lines.

- This means that any lines you draw with HydroAdd cannot be longer than a ReachCode.
- You can draw multiple and/or overlapping lines on a single ReachCode, but the lines geometry cannot extent beyond either end of the ReachCode.
- If you draw a line that has start and end points on different ReachCodes, HydroAdd automatically cuts the line at the ReachCodes, creating one line for each ReachCode.

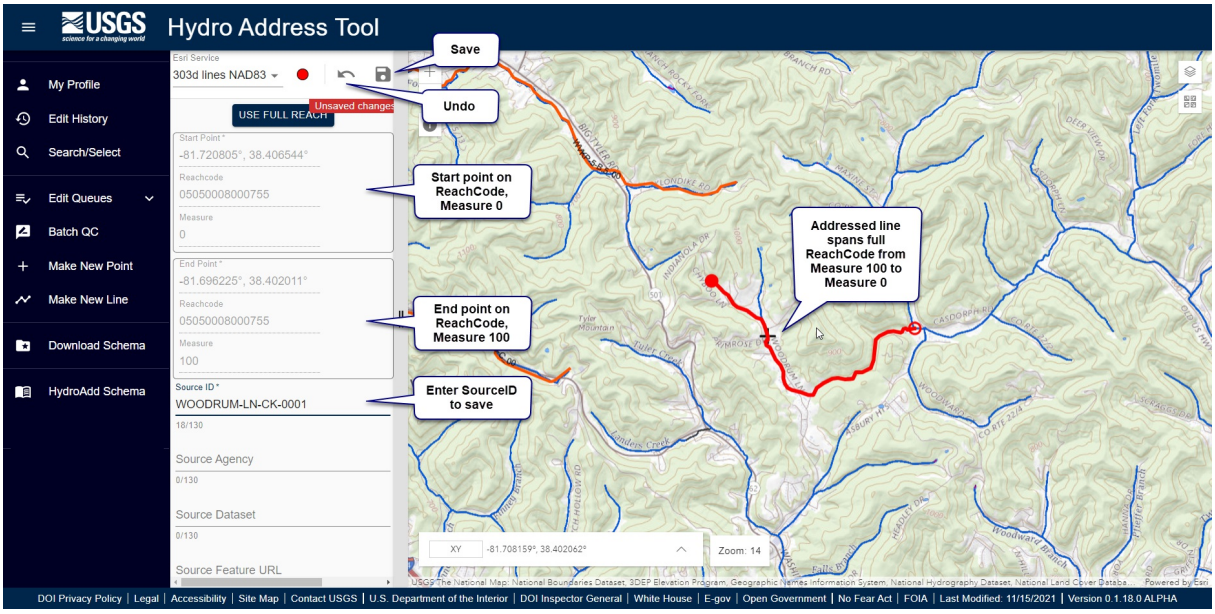
Option to use full reach

When “Use Full Reach” is on, you can make a line that spans the entire ReachCode with just one click. The new line spans the entire ReachCode, from measure 0 to measure 100. The measure is always a number between 0 and 100-- downstream 0 and 100 being upstream. In the NHD HR model, the From Measure is always upstream--the larger measure, while the To Measure is always downstream--the smaller measure. Measure can be thought of as a "percent upstream" on a ReachCode.

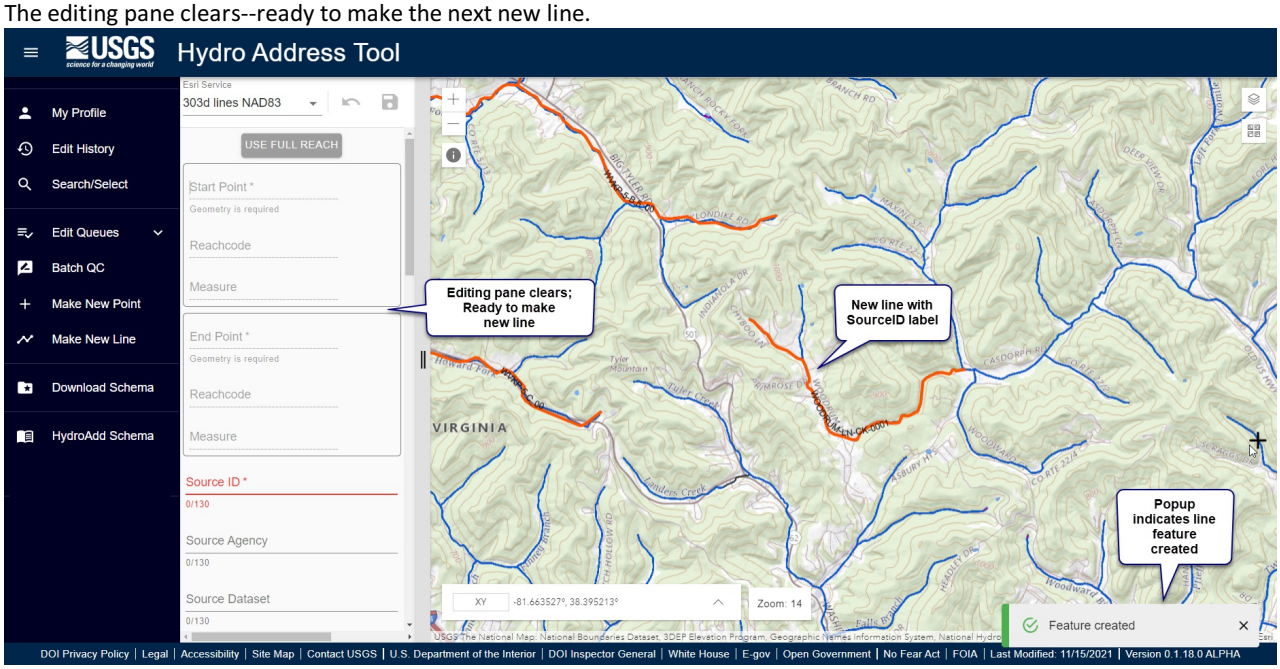
1 Click Make New Line
2 Select the service layer.
3 Turn on “Use Full Reach” button.
4 Zoom to level 14. The crosshair cursor appears.



5 Click once on a ReachCode.
6 After a moment, the updated line appears in red, spanning the ReachCode from measure 0 to measure 100.
  a Start point is a halo. End point is an opaque point.
  b You may need to zoom out to see the entire ReachCode.
  c Click the Undo button if you need to adjust the line.
  d Click Undo once to clear the end point.
  e Click Undo twice to clear the start point.
  f If you click Undo twice, you clear the both the start and end points, allowing you to draw the entire line again.



7 Update the SourceID, SourceDataset, SourceFeatureURL, and FeatureType.
   a SourceID cannot be Null. If SourceID is Null, the item cannot be saved.
8 Click save, upper right side of the editing pane.
9 After a moment, the new line appears in the map.
10 Popup, lower right, indicates feature created.
11 The editing pane clears--ready to make the next new line.

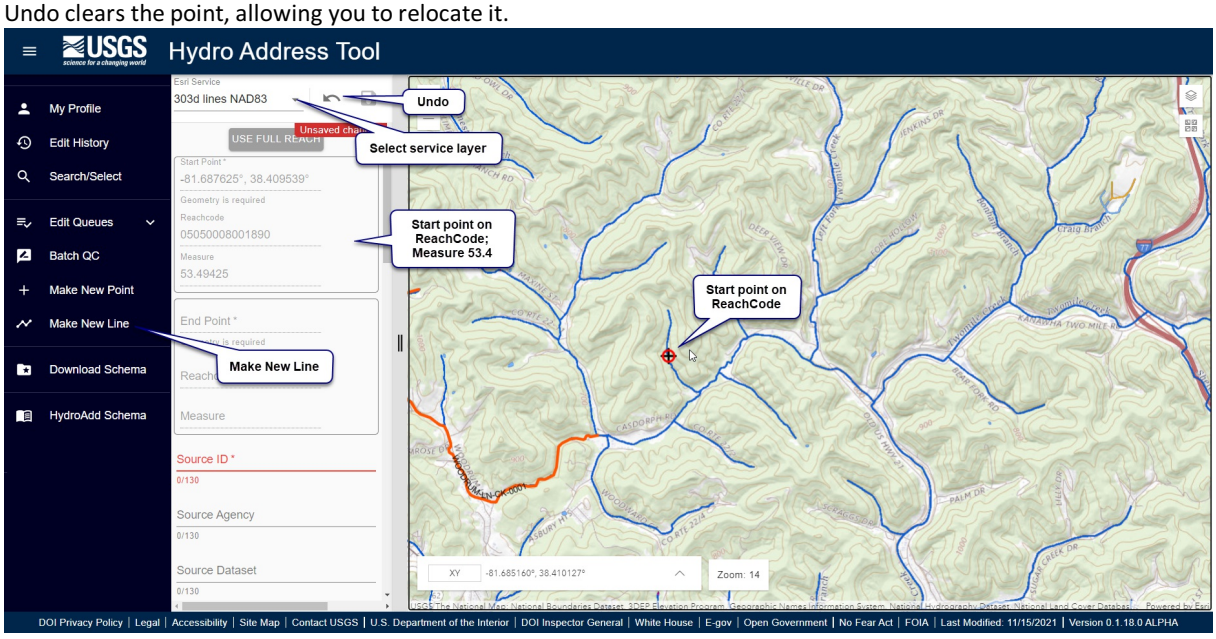


Option to use partial reach

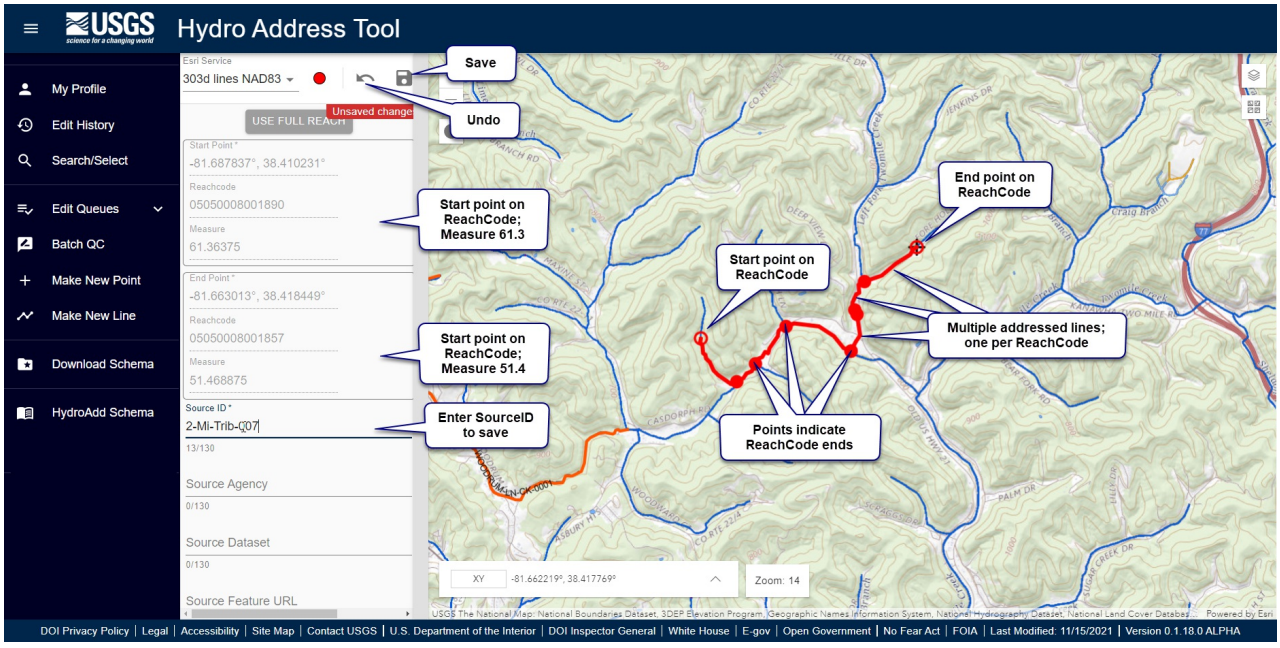
When “Use Full Reach” is off, you must click both the start and end points of the new line. The measure is always a number between 0 and 100-- downstream 0 and 100 being upstream. In the NHD HR model, the From Measure is always upstream--the larger measure, while the To Measure is always downstream--the smaller measure. Measure can be thought of as a "percent upstream" on a ReachCode.

1 Click Make New Line
2 Select a service layer.
3 Confirm “Use Full Reach” button is off.
4 Zoom to level 14. The crosshair cursor appears.
5 Click once to make the start point of the line.
   a A red halo appears at the new start point location.
   b HydroAdd updates the ReachCode, FromMeasure, FromSnapDistance, ToSnapDistance, GNIS_NAME, GNIS_ID, and other QC fields.
   c Click the Undo button if you need to adjust the start point.

d Undo clears the point, allowing you to relocate it.



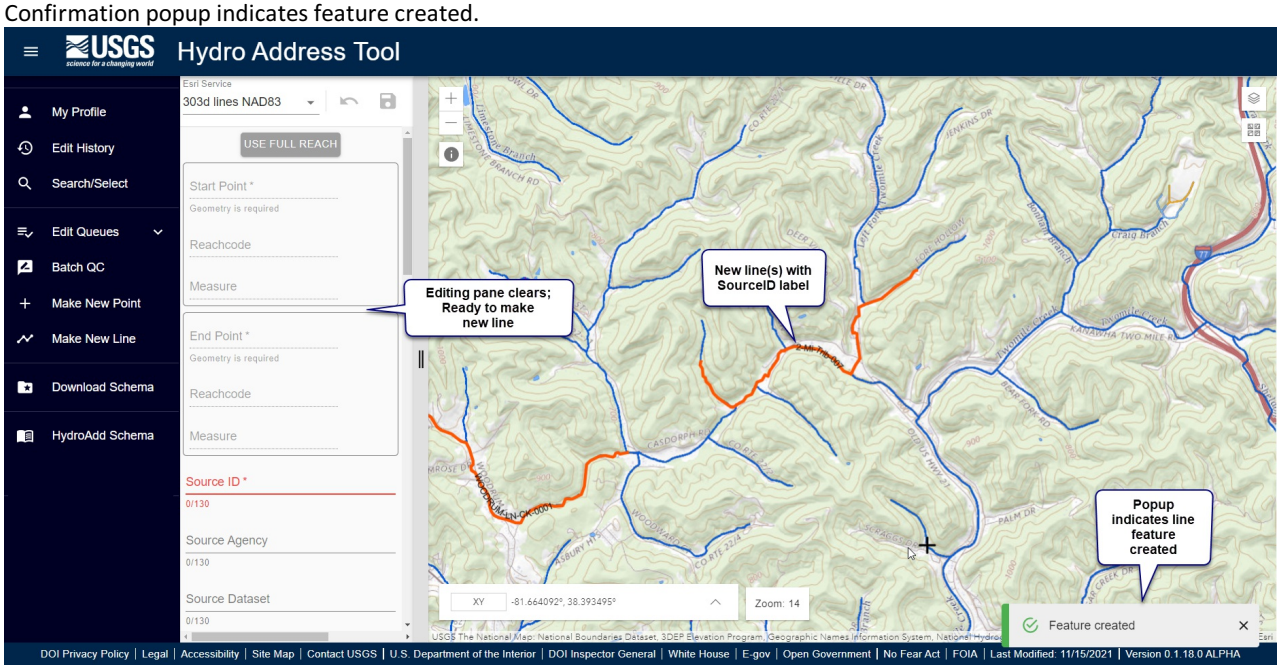
6 Click a second time to make the end point of the line.
  a Click the Undo button if you need to adjust the line.
  b Undo clears the end point, allowing you to relocate it.
7 If you click Undo twice, you clear the both the start and end points, allowing you to draw the entire line again.
8 Alternatively, you can adjust the line by clicking again. You can adjust the line as many times as necessary. The line is not final until you save.
  a Consecutive clicks cycle through the start and end points. For example:
  b First click makes the start point of the line.
  c Second click makes the end point of the line
  d Third click makes a new start point.
  e Fourth click makes a new end point.
  f Fifth click makes a new start point, and so on…
9 After a moment, the new line(s) appears in red.
  a Start point is a halo. End point is an opaque point.
  b You may need to zoom out to see the entire ReachCode.
10 If the end point is on a different ReachCode than the start point, HydroAdd creates multiple lines—one line for each ReachCode.



11 Update the SourceID, SourceDataset, SourceFeatureURL, and FeatureType.
  a SourceID cannot be Null. If SourceID is Null, the item cannot be saved.
  b If there are multiple lines, each line has will have the same SourceID—and if you entered them—SourceDataset, SourceFeatureURL and FeatureType.

12 Click the save icon in the upper right side of the editing pane.

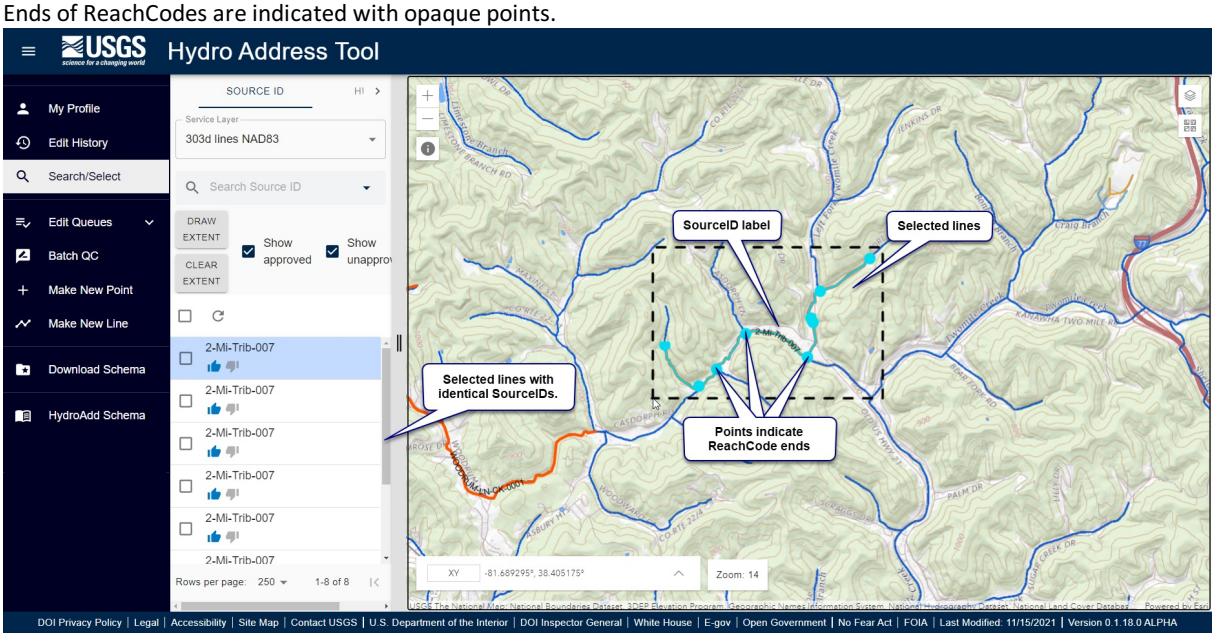
13 Confirmation popup indicates feature created.



14 You can confirm creation of multiple line events by selecting the new lines.

a If there are multiple lines, each line has the same SourceID—and if you entered them—SourceDataset, SourceFeatureURL and FeatureType.

b Ends of ReachCodes are indicated with opaque points.



See also Editing Lines.

Batch QC for points

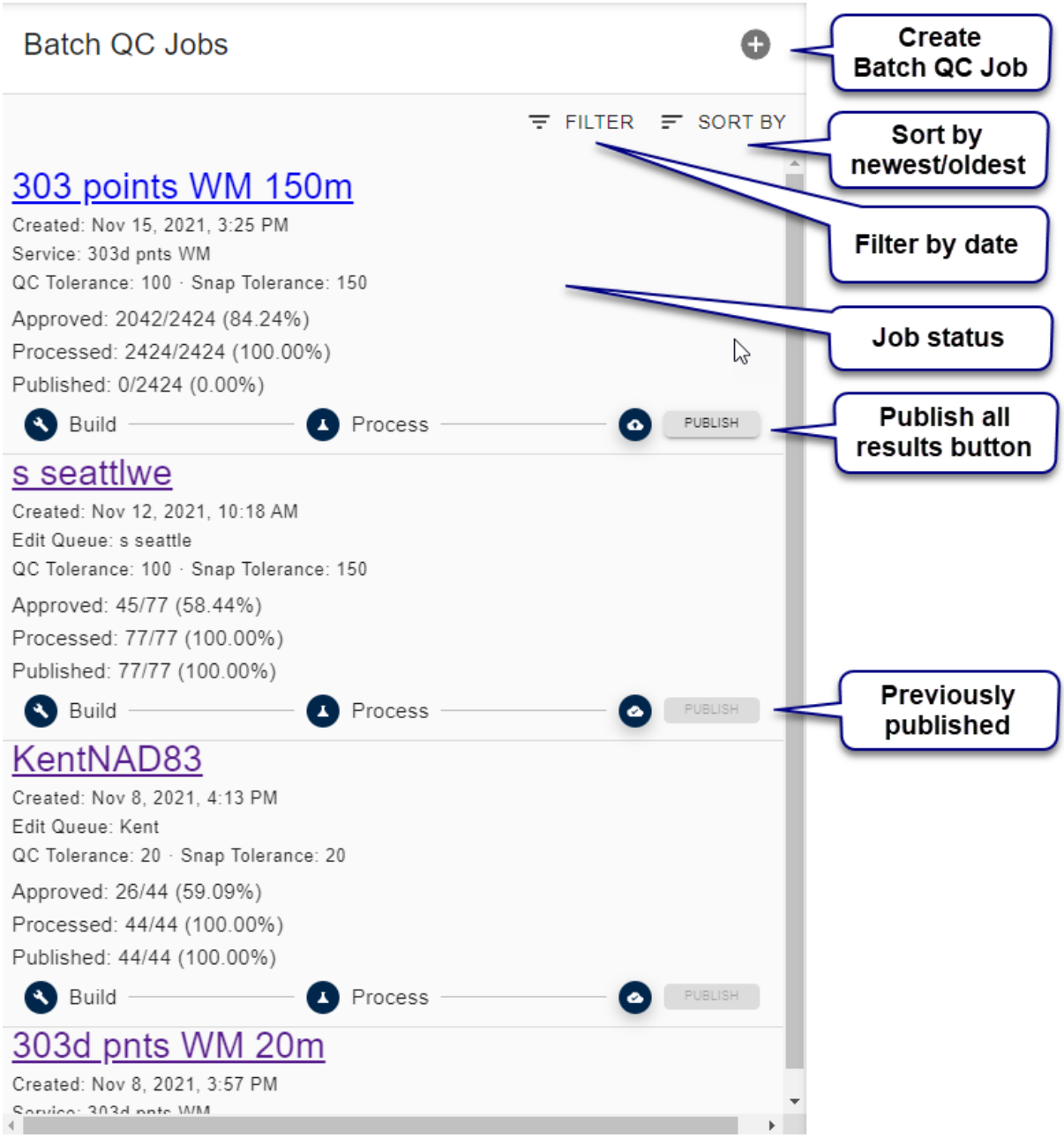
Batch QC allows you to rapidly address large data sets with many records. You can run Batch QC on an entire service layer or an existing queue. It is a tool designed to save you time. For example, if you have a thousand points to address, you may not have time to manually address all of them. Let Batch QC do the work of automatically snapping your points to flowlines within the snap tolerance. Then you can manually inspect only those points that did not automatically snap.

If your data has been previously been addressed and already has a ReachCode or GNIS_NAME, HydroAdd will snap it to the flowline with a matching ReachCode or GNIS_NAME. Batch QC prioritizes ReachCode over GNIS_NAME but can use either. For example, you may have point events that have previously been addressed to the NHDPlus V2. Batch QC will snap the point events to a matching ReachCode in the NHD, if it is within the snap tolerance.

Batch QC results reside on the HydroAdd application server—your data are not updated to AGOL until you publish. Results of Batch QC jobs are always available in the Batch QC pane--even after you publish or remove the corresponding service layer from AGOL. You should always review the results of Batch QC before you publish the results to your service layer on AGOL. This acts as a safeguard to protect your data because it allows to you to try different snap tolerances before you publish. You cannot undo the edits to your data once HydroAdd publishes the updates. In any case, you should always keep a copy of your original data and ArcGIS Pro project.

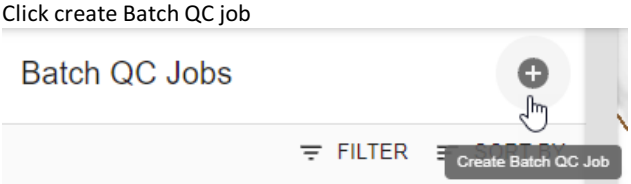
Batch QC Pane

The Batch QC panes lists all the batch jobs you have run. You can filter the jobs list by date range, or sort by created/completed date. The Batch QC results listed in the Batch QC Pane reside on the HydroAdd application server—your data are not updated to AGOL until you publish. Results of Batch QC jobs are always available in the Batch QC pane--even after you publish or remove the corresponding service layer from AGOL.

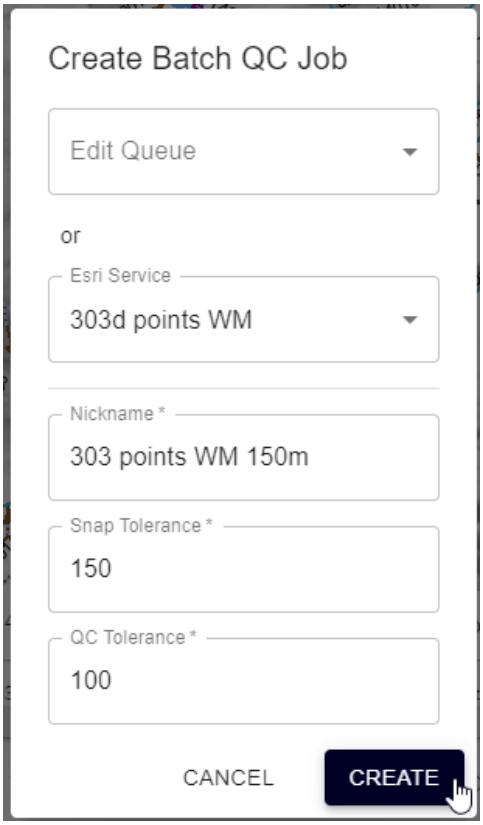


Create Point Batch QC Job

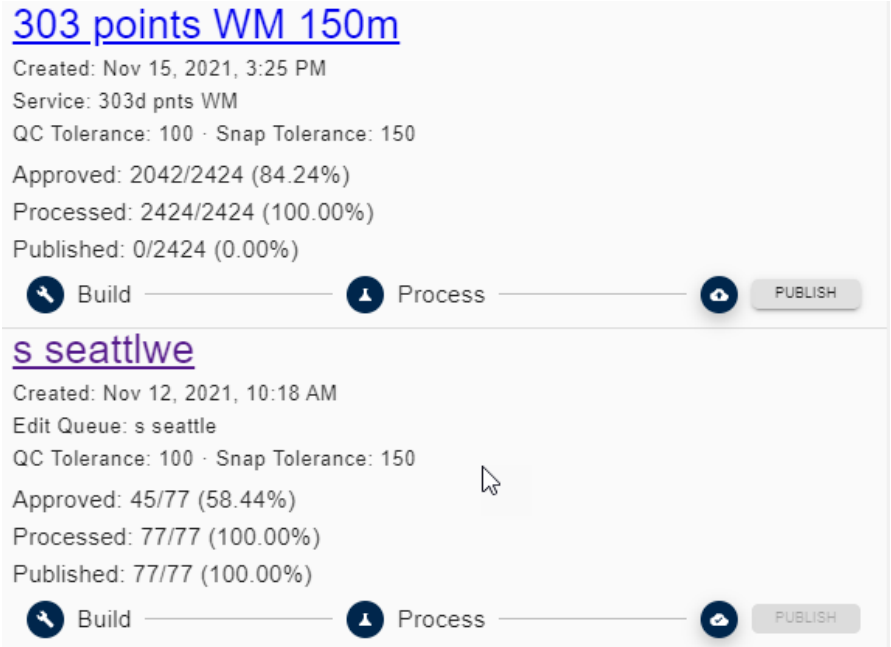
1 Click create Batch QC job



2 The Create Batch QC Job window pops up.
3 Enter a queue or an entire service.
4 Enter a nickname the Batch QC job.
5 Enter the Snap Tolerance
6 Enter the QC Tolerance.
7 Click Create.



8 The Batch Job runs in the background.
9 Check the Batch QC Jobs Pane to see progress.
10 The Job Status updates in real time as the job as runs.
The Batch QC Job Status shows:
a Created date
b Service name
c QC Tolerance and Snap Tolerance
d Percent of features approved
e Percent of features processed
f Percent of features published to AGOL
g Job status—if the job is published, the publish button is grayed-out.



Snap Tolerance

User input. The maximum distance you allow Batch QC to move a point to a flowline. It is essentially a buffer around the input point. If there is a flowline feature within the snap tolerance of the input point, Batch QC will snap it.

- If SnapDistance <= SnapTolerance, then InSnapTolerance = Yes.

- If no flowlines are within the SnapTolerance, then InSnapTolereance = No, InQCTolerance = No, and QCApproved = No
- If the input point already has a ReachCode, Batch QC will snap it to the NHDFlowline with matching ReachCode, if it is within the SnapTolerance.
- If the input point already has a GNIS_NAME, Batch QC will snap it to the NHDFlowline with matching GNIS_NAME, if it is within the Snap Tolerance.
- If the input point already has both a ReachCode and GNIS_NAME, ReachCode takes priority.
- If the input point does not have a preexisting ReachCode or GNIS_NAME, Batch QC will snap it to the nearest flowline within SnapTolerance regardless of the ReachCode or GNIS_NAME on the flowline.

See also HydroAdd Point Schema.

See also Point Batch QC logic.

QC Tolerance

User input. The maximum snap distance where the point is automatically approved. If a flowline is within the snap tolerance of the input point, Batch QC will snap it to the flowline, in all cases. However, automatic approval by Batch QC depends on the QC tolerance. If the snap distance is greater than the QC tolerance, then the point is not approved.

- If SnapDistance <= QCTolerance, then InQCTolerance = Yes, and QCApproved = Yes
- If no flowlines are in the SnapTolerance, then the point does not move. In this case, InSnapTolereance = No, InQCTolerance = No, and QCApproved = No

Tips for setting QC tolerance

- QC Tolerance is important when your input points do not have a preexisting ReachCode or GNIS_NAME.
- QC Tolerance is especially useful in cases where the snap tolerance is large. When the Snap Tolerance is large, there are likely to be multiple flowlines within the snap tolerance. If the point moves very far when it snaps, there is a possibility it will snap to the wrong flowline. For this reason, when using a large snap tolerance, a good practice is to set the QC tolerance at about one half or more of the snap distance.

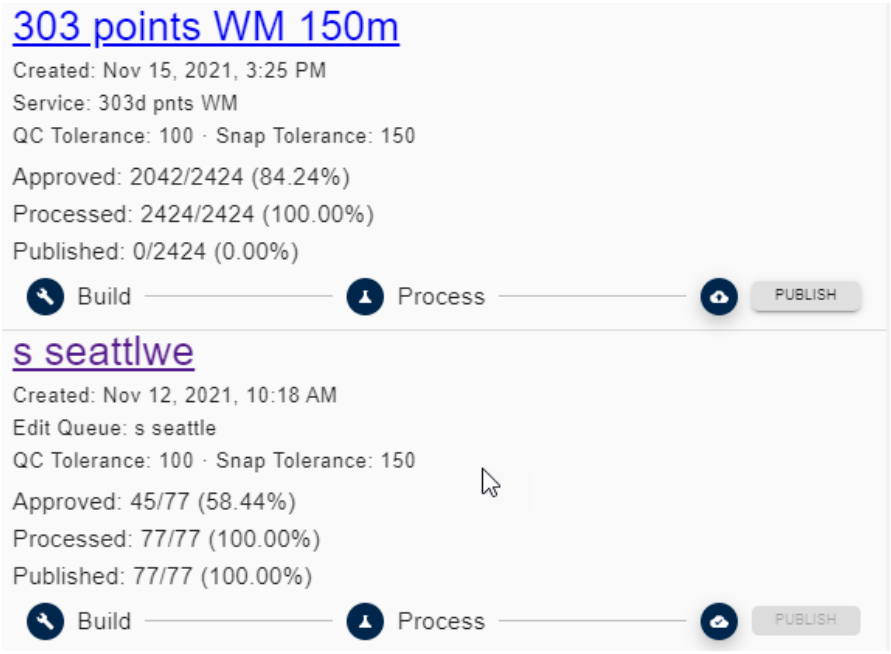
See also HydroAdd Point Schema.

See also Point Batch QC logic.

Batch QC Job Status

The Batch QC Job Status shows:

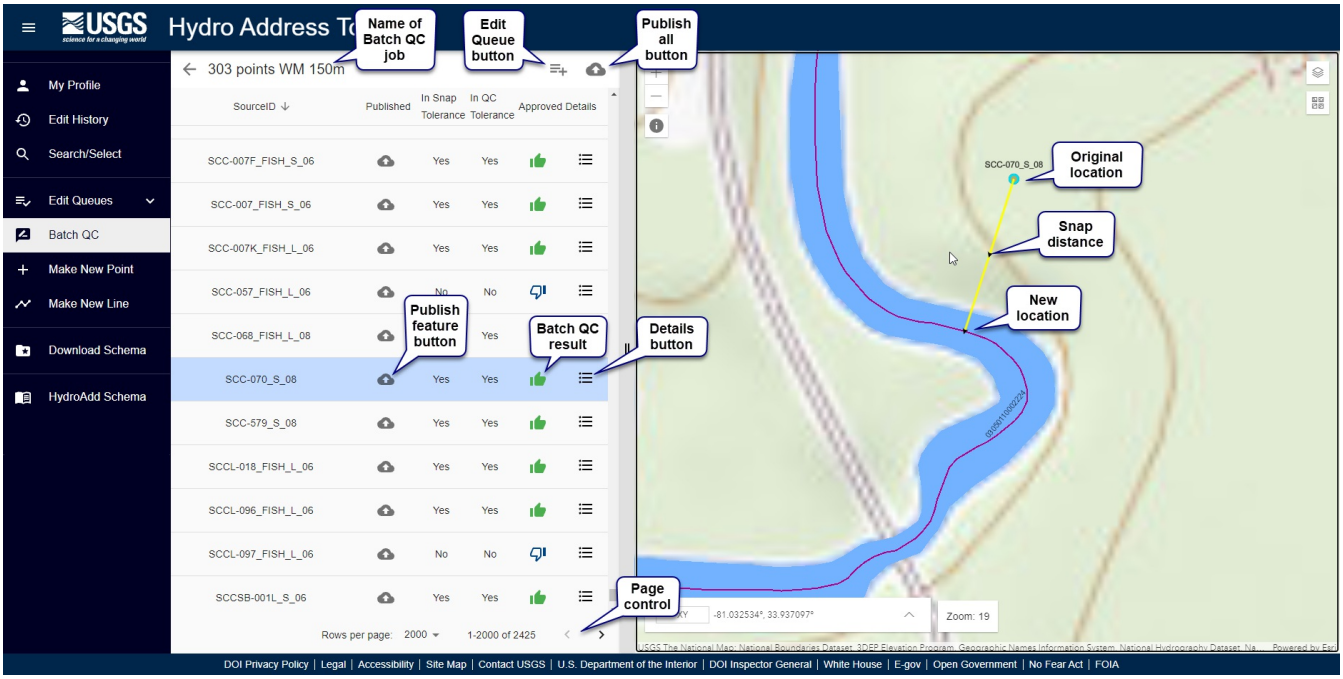
- Created date
- Service name
- QC Tolerance and Snap Tolerance
- Percent of features approved
- Percent of features processed
- Percent of features published to AGOL
- Job status—if the job is published, the publish button is grayed-out.



Batch QC Review Queue

The Batch QC Review Queue allows you to review the Batch QC results before you publish to AGOL. Batch QC results reside on the HydroAdd application server—your data are not updated to AGOL until you publish. Results of Batch QC jobs are always available in the Batch QC pane—even after you publish or remove the corresponding service layer from AGOL. You should always review the results of Batch QC before you publish the results to your service layer on AGOL. This acts as a safeguard to protect your data because it allows to you to try different snap tolerances before you publish. You cannot undo the edits to your data once HydroAdd publishes the updates. In any case, you should always keep a copy of your original data and ArcGIS Pro project.

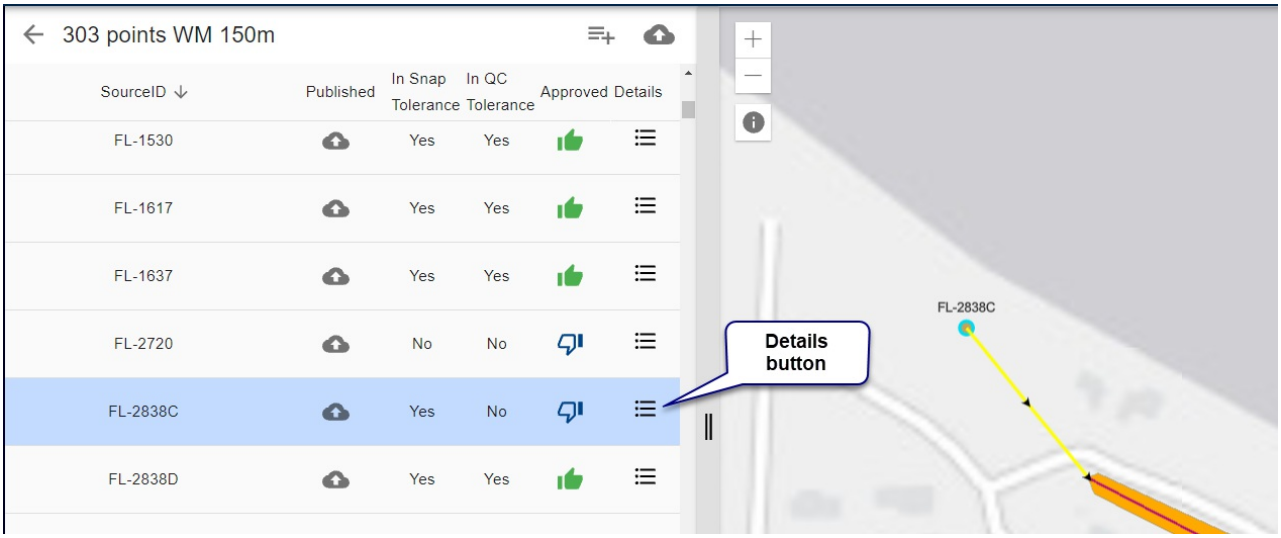
- Click a row in the Batch QC queue to zoom to the feature. The map zooms to the yellow snap distance arrow.
- Items in the Batch QC queue appear cyan on the map.
- Hover the cursor over a row to highlight features yellow on the map.
- Queues are paginated. You can choose the number of rows per page.



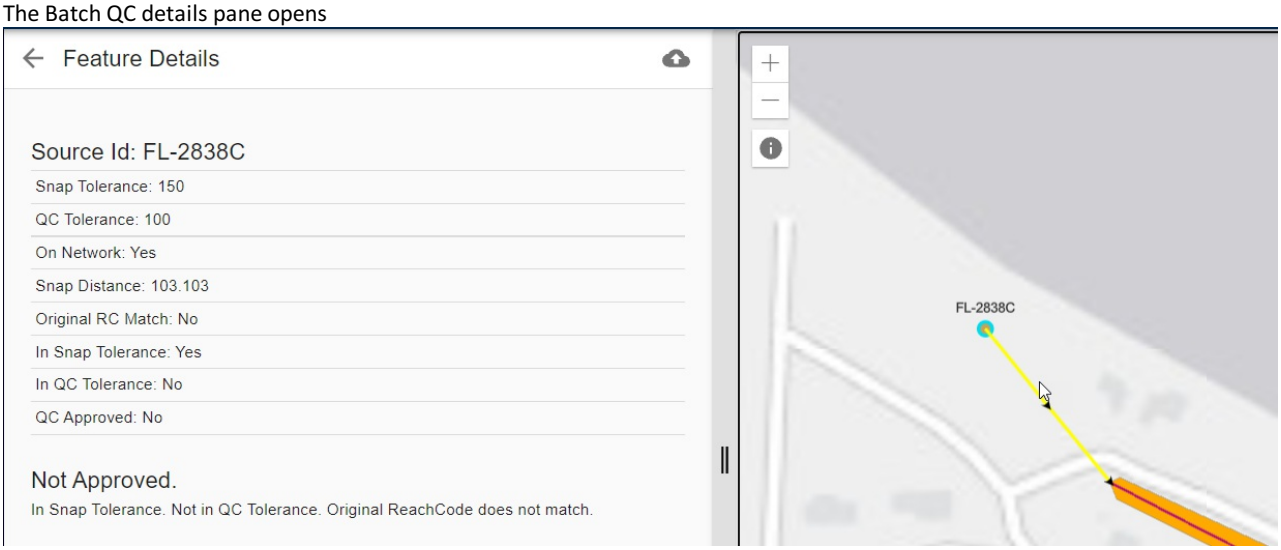
Batch QC Feature Details

You see details of the Batch QC for each feature.

1 Click the details button from a row in the Batch QC queue



2 The Batch QC details pane opens



3 The Batch QC details for each feature indicates:

a Snap Tolerance
b QC Tolerance
c On Network (Y/N)
d Snap Distance
e Original ReachCode Match (Y/N)
f In Snap Tolerance (Y/N)
g QC Approved (Y/N)

See also HydroAdd Point Schema.

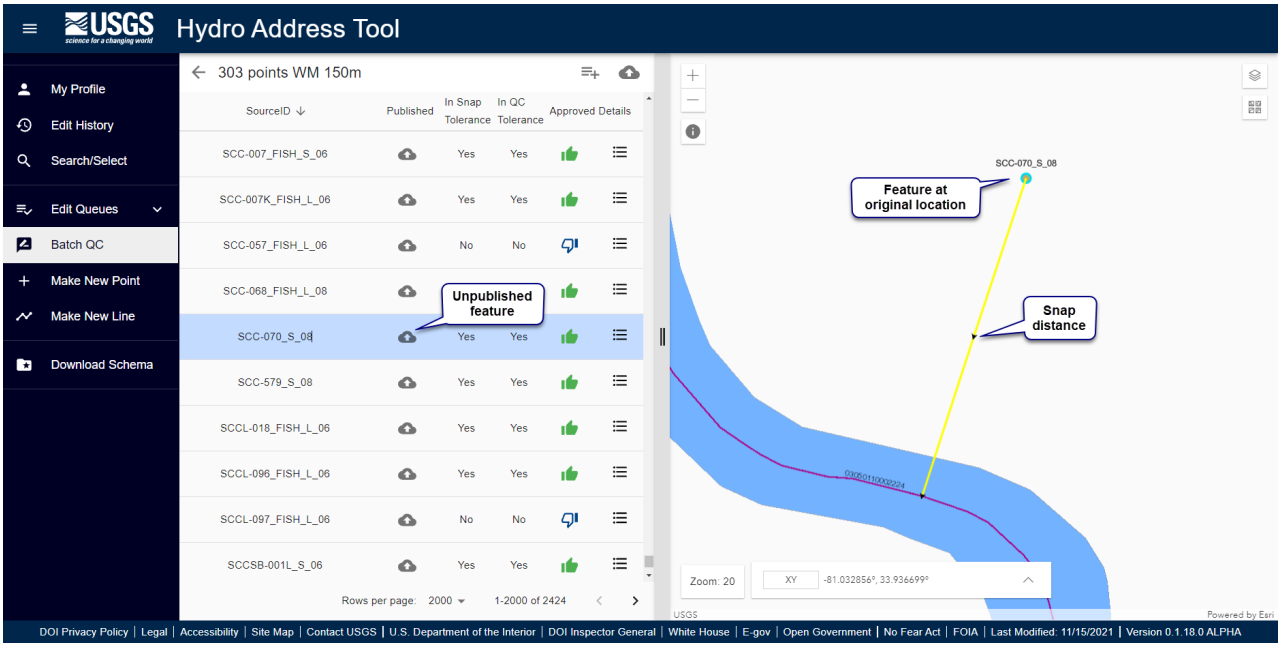
See also Point Batch QC logic.

Publishing a Feature

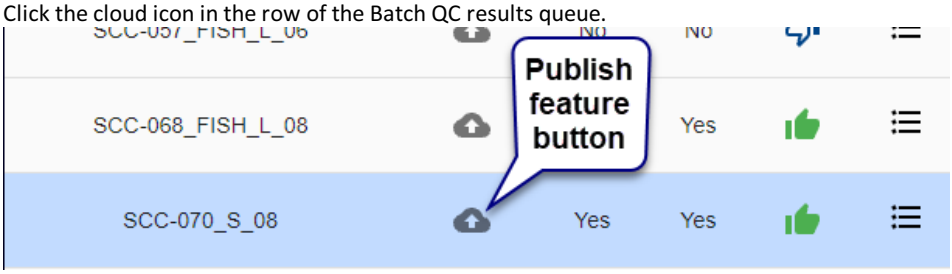
Publishing from HydroAdd updates the features in your service layer at AGOL. However, the results in the Batch QC queue, do not update after publishing. The results are essentially a static snapshot of the state of your service layer before publishing. Even when the features in the map update to new locations after publishing, results of Batch QC queue remain unchanged. You can always run Batch QC again after publishing, but you will get different results because publishing updates service layer—many of the feature will have been addressed to flowlines. To see the actual approval status of the features after publishing, you must examine the features in an editing queue, or use the identify tool in the map.

To publish just one feature

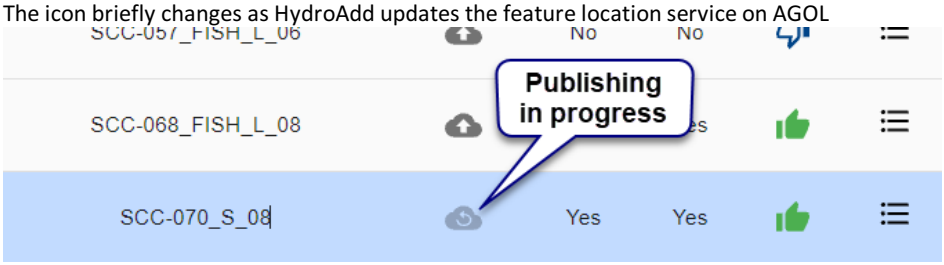
1 The feature original location has cyan halo.



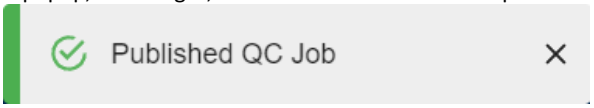
2 Click the cloud icon in the row of the Batch QC results queue.



3 The icon briefly changes as HydroAdd updates the feature location service on AGOL

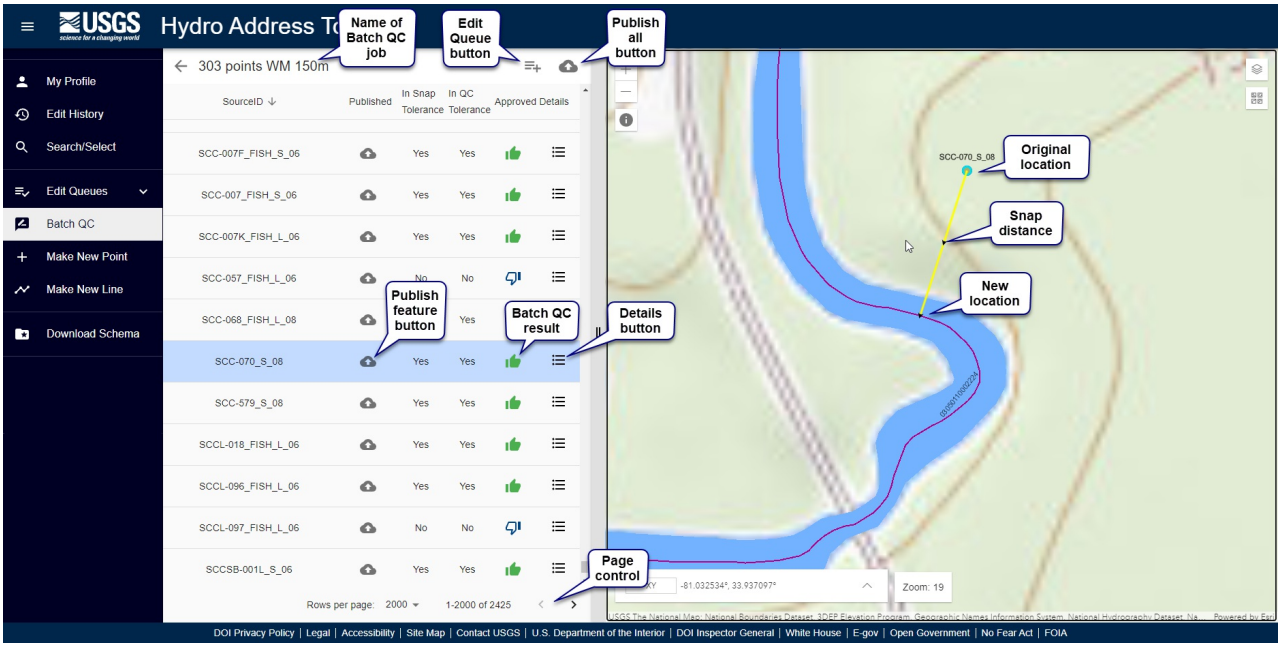


4 A popup, lower right, indicates when the feature updates.



5 The cloud icon changes to indicate publishing of feature is complete.

6 After a moment, the map updates to show the updated location.



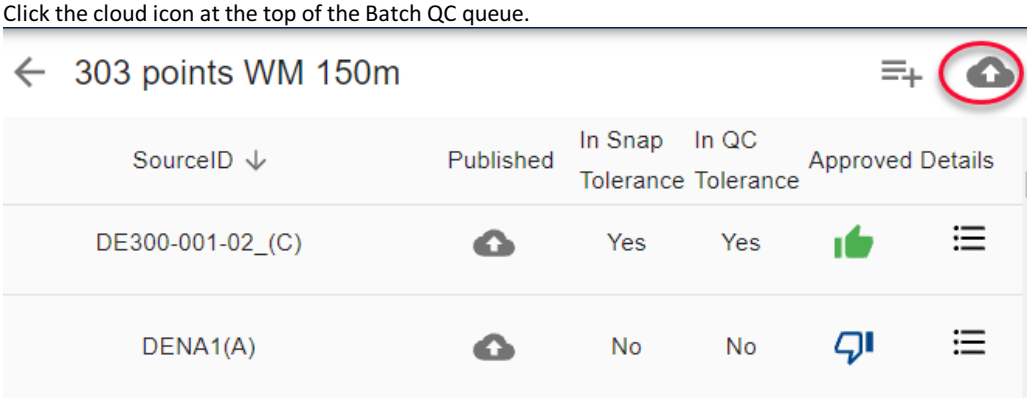
Publishing an Entire Job

Publishing from HydroAdd updates the features in your service layer at AGOL. However, the results in the Batch QC queue, do not update after publishing. The results are essentially a static snapshot of the state of your service layer before publishing. Even when the features in the map update to new locations after publishing, results of Batch QC queue remain unchanged. You can always run Batch QC again after publishing, but you will get different results because publishing updates service layer—many of the feature will have been addressed to flowlines. To see the actual approval status of the features after publishing, you must examine the features in an editing queue, or use the identify tool in the map.

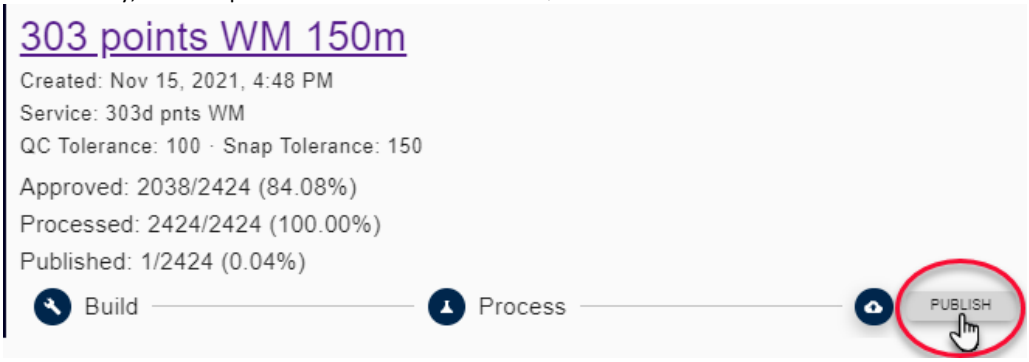
- You can publish only approved, only unapproved, or all features.
- It is convenient to publish only approved items to your service layer but make a queue of only the unapproved items. Manually examining only the unapproved items in a normal editing queue can save you time on large jobs.

To publish an entire job

1 Click the cloud icon at the top of the Batch QC queue.

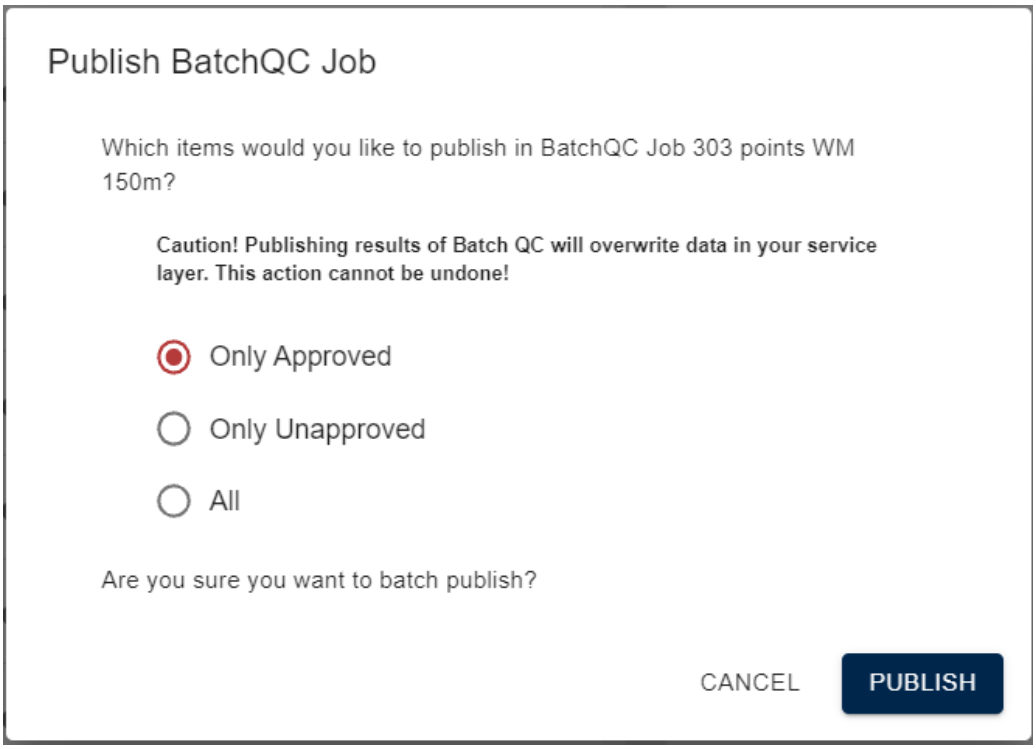


2 Alternatively, click the publish button from the Batch QC Job Status



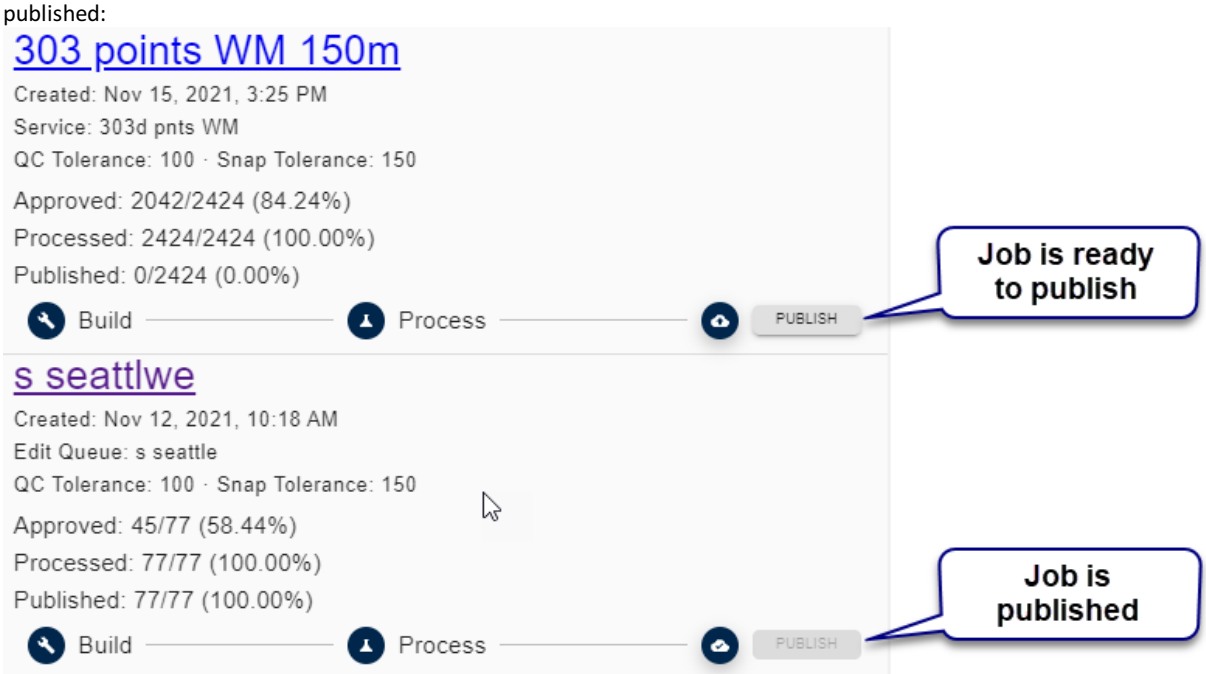
3 The Public Batch QC Job window pop up.
4 Select to publish only approved, only unapproved, or all features.

5 It is convenient to publish only approved items to your service layer but make a queue of only the unapproved items. Manually examining only the unapproved items in a normal editing queue can save you time on large jobs.

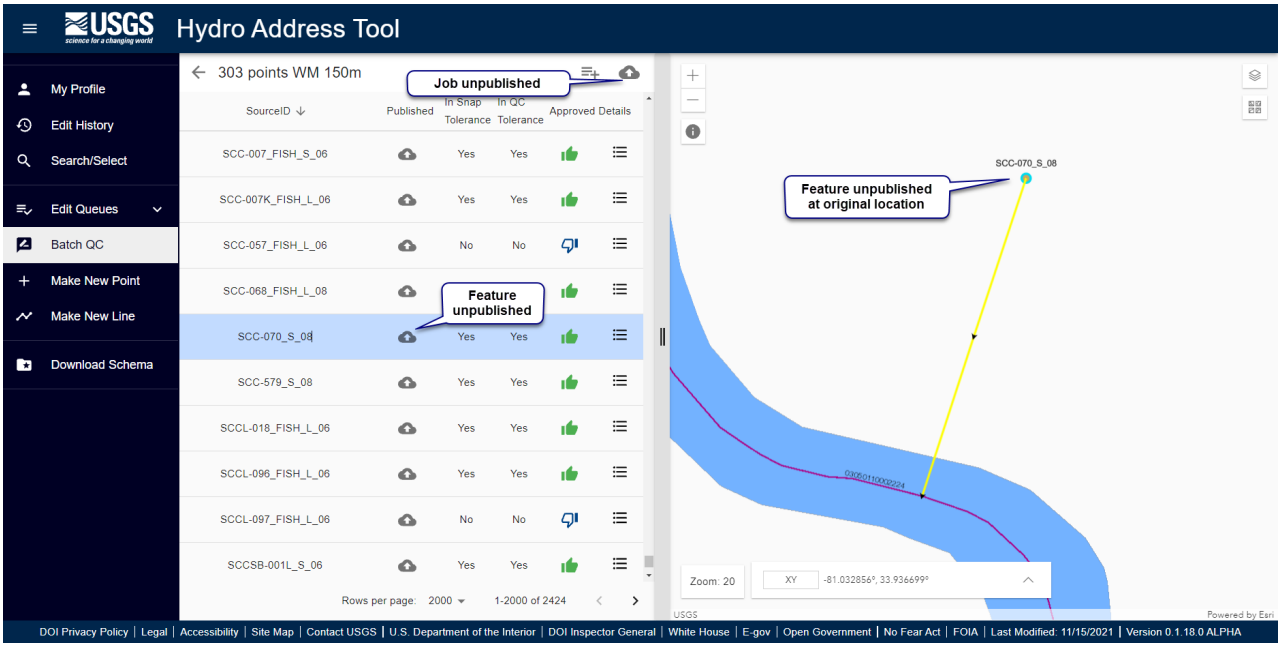


Publishing status

- The Publish button in the Job status indicates publishing status of the entire job.
- If the button is illuminated, the entire job can be published. If the button is grayed out and disabled, the job has already been published:



- The cloud icon at the top the queue also shows the publishing status of the entire job.
- The cloud icon in the row of the Batch QC queue shows the publishing status of the feature.

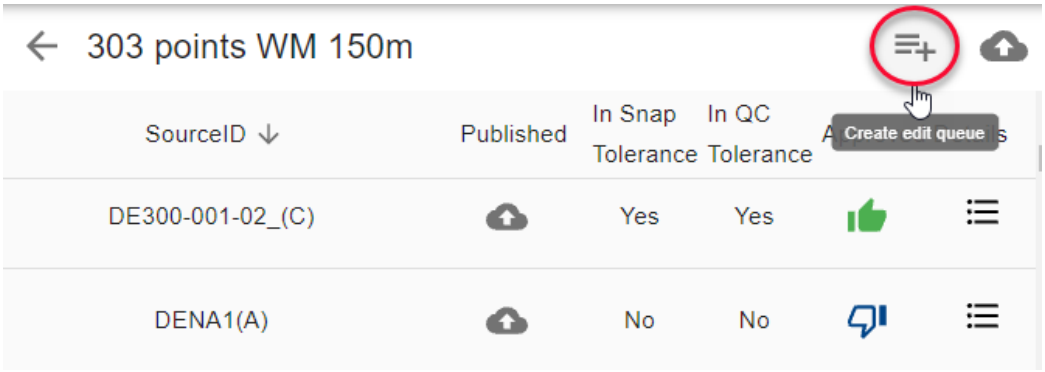


Making queues from Batch QC Jobs

You can make queues from approved items, unapproved items, or both.

It is convenient to make a queue of only the unapproved items but publish only approved items to your service layer. Manually examining only the unapproved items in a normal editing queue can save you time on large jobs.

1 Click Create Edit Queue from the Batch QC results.

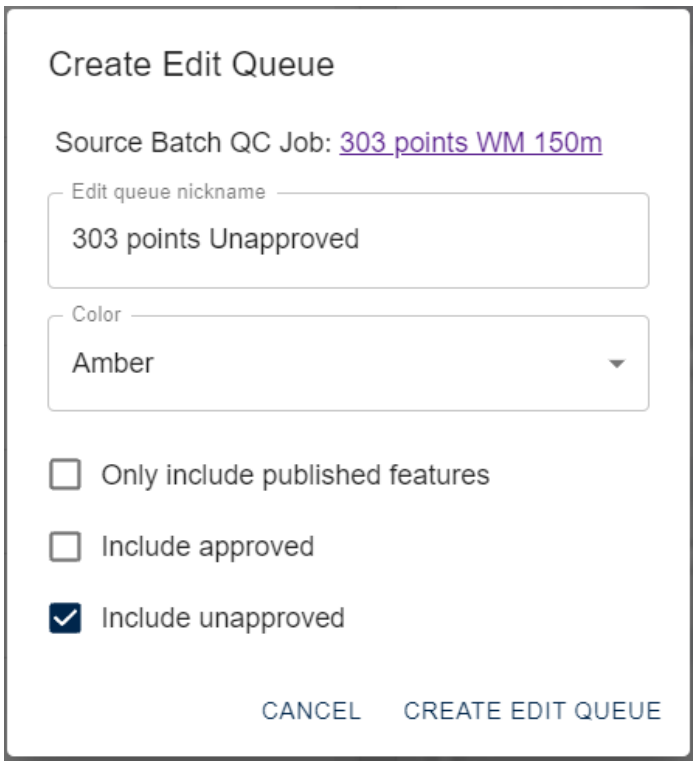


2 The Create Edit Queue window pops up.

a Choose approved, unapproved or both.

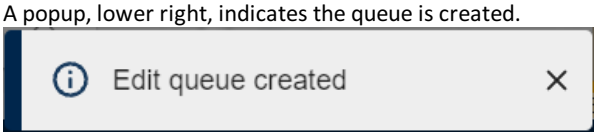
b Select published features or not.

c Enter a name and choose a color

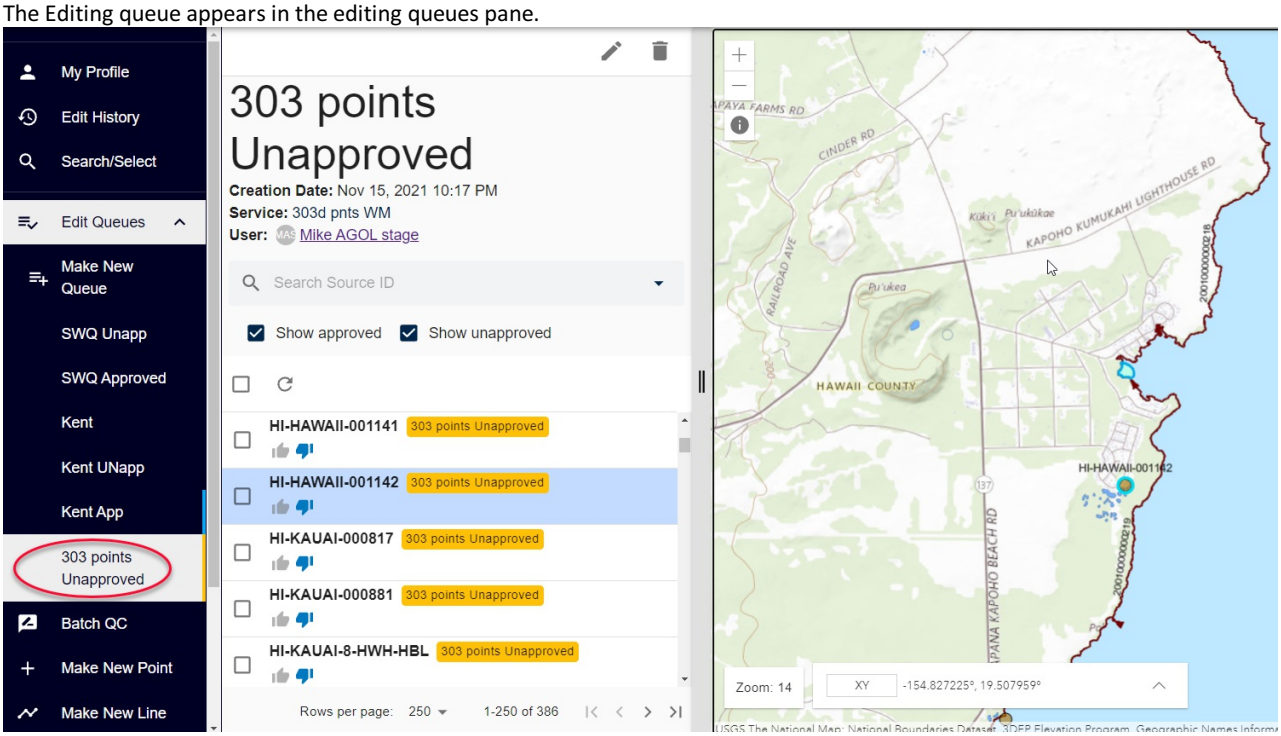


3 Click Create queues.

4 A popup, lower right, indicates the queue is created.



5 The Editing queue appears in the editing queues pane.



Point Batch QC logic table

Overview of point Batch QC Logic:

- If SnapDistance <= SnapTolerance, then InSnapTolerance = Yes

- If no flowlines are in within the SnapTolerance, then InQCTolerance = No and QCApproved = No
- If SnapDistance <= QCTolerance, then InQCTolerance = Yes.
- If QCApproved = No, then the user should manually QC the item in an editing queue.

Case	InSnapTolerance	InQCTolerance	QCApproved	Batch QC Detail Message
Point is not in snap tolerance	NO	NO	NO	Not approved: Point is not in snap tolerance
Point is equidistant from two or more flowlines	YES	NO	NO	Not approved: Point is equidistant from two or more flowlines
Point is in snap tolerance, but not in QC tolerance	YES	NO	NO	Not approved: Point is not in QC tolerance
Point is in snap tolerance, and in QC tolerance	YES	YES	YES	Approved: Point is in QC tolerance

The HydroAdd Data Schema

HydroAdd requires your data be in the HydroAdd schema. Both core and QC fields are required.
Learn how to put your data into the HydroAdd schema.

HydroAdd point schema, core fields

Field Name	Field Description	Source	Notes	Field Type	Length	Domain	Allow Nulls
SourceID	Unique identifier of source data feature.	User	Required. Can be pre-populated by the user. Any alphanumeric text is acceptable. HydroAdd uses the SourceID as the feature identifier in the queue. SourceID is also used as the feature label in the map. SourceID is required to save any new or updated features.	text	130		No
SourceAgency	Source agency. Owner of data.	User	Name or description of agency. Can be pre-populated by the user. For example: U. S. Geological Survey.	text	130		Yes
SourceDataset	Description of source data.	User	Name or description of dataset. Can be pre-populated by the user. For example: National Water Information System.	text	130		Yes
SourceFeatureURL	Unique URL to source feature data.	User	Use for a unique or general web address to your feature data on the internet. For example: https://waterdata.usgs.gov/monitoring-location/09380000/#parameterCode=00065&period=P7D	text	255		Yes
FeatureType	Type of feature or type of hydro observation.	User	Type of hydro observation. Can be pre-populated by the user. Any data type is acceptable. For example: dam, stream gage, divergence structure, hydrologic unit outlet, spring, seep, sink, rise, biologic sampling site, point source pollution, Wild and Scenic River, Waters of the United States, stretches of river for recreational rafting, dye traces in a karst landscape; algal blooms on reservoirs, or hyacinth overgrowth on reservoirs.	text	60		Yes
ReachCode	ReachCode of network address.	Populated by HydroAdd	ReachCode can be pre-populated by the user prior to running Batch QC with HydroAdd. Batch QC will use the pre-existing ReachCode for addressing if an NHD feature with a matching ReachCode is available in the search tolerance.	text	14		Yes
Measure	Measure of network address.	Populated by HydroAdd	The measure is a number between zero and one-hundred--zero being downstream and one hundred being upstream. In the NHD HR model, the From Measure is always upstream--the larger measure, while the To Measure is always downstream--the smaller measure. Measure can be thought of as a "percent upstream" on a ReachCode.	double			Yes
ReachSMDate	Most recent date of spatial modification of underlying NHD reached feature.	Populated by HydroAdd	ReachSMDate is a time stamp of most recent geometry edit to the feature. Pulled from NHDReachCodeMaintenance table	date			Yes
AddressDate	Date of addressing.	Populated by HydroAdd	Date of creation or most recent edit of user's addressed data.	date			Yes
Catchment	NHDPlus HR Catchment. NHDPlus ID.	Populated by HydroAdd	Pulled from the most recent snapshot of NHDPlus HR catchments	double			Yes
HU	WBD HU12.	Populated by HydroAdd	HU12 is populated by default. User can manually enter any HU-level up to HU16.	text	16		Yes
OnNetwork	Indicates if an item is located on the flowline network or not.	Populated by HydroAdd	For unaddressed items, OnNetwork=No. After addressing OnNetwork=Yes.	short		NoYes Domain	No
HydroAddressID	Unique identifier. 40-digit GUID.	Populated by HydroAdd	HydroAdd creates a unique identifier for all new features. For existing features, if HydroAddressID is not already populated, HydroAdd will create a GUID when the feature is updated and saved.	text	40		Yes

HydroAdd point schema, QC fields

Field name	Field Description	Source	Notes	Field type	Length	Domain	Allows Nulls
GNIS_NAME	GNIS_NAME at network address. Populated by HydroAdd tool during manual addressing or Batch QC.	Populated by HydroAdd	♦ Can be pre-populated by the user prior to running Batch QC with HydroAdd. ♦ Batch QC will use the pre-existing GNIS_NAME for addressing if an NHD feature with a matching GNIS_NAME is available in the search tolerance.	text	65		Yes
GNIS_ID	GNIS_ID at network address. An QC optional field. If the field is present in the user's data, HydroAdd will populate it during manual addressing or Batch QC.	Populated by HydroAdd	♦ Can be pre-populated by the user prior to running Batch QC with HydroAdd. ♦ Optional field	text	10		Yes
SnapTolerance	User input. SnapTolerance is a buffer around the input point. Points will snap to an NHDFlowline feature within the SnapTolerance.	User input	♦ If SnapDistance <= SnapTolerance, then InSnapTolerance = Yes. ♦ If no NHDFlowlines are in the SnapTolerance, then InSnapTolereance = No, InQCTolerance = No, and QCApproved = No	double			No

SnapDistance	Distance in meters from the original point feature to the newly addressed location.	Populated by HydroAdd	Indicates how far a point moved during update or Batch QC.	double			No
InSnapTolerance	Indicates if the original point feature is within the SnapTolerance.	Populated by HydroAdd	If SnapDistance <= SnapTolerance, then InSnapTolerance = Yes.	short	1	NoYes	No
QCTolerance	User input. Maximum allowable distance in meters to approve snapped feature. The QC tolerance is the maximum distance where the point is automatically approved.	User input	If SnapDistance <= QCTolerance, then InQCTolerance = Yes	double			No
InQCTolerance	Indicates if the SnapDistance is within the user input QCTolerance.	Populated by HydroAdd	♦ If SnapDistance <= QCTolerance, then InQCTolerance = Yes ♦ If no NHDFlowlines are in the SnapTolerance, then InSnapTolereance = No, InQCTolerance = No, and QCApproved = No	short	1	NoYes	No
QCApproved	Indicates approval status.	Populated by HydroAdd	QCApproved = NO means the user should manually QC the item in an editing queue	short	1	NoYes	No

HydroAdd line schema, core fields

Field Name	Field Description	Source	Notes	Field Type	Length	Domain	Allow Nulls
SourceID	Unique identifier of source data feature.	User	Required. Can be pre-populated by the user. Any alphanumeric text is acceptable. HydroAdd uses the SourceID as the feature identifier in the queue. SourceID is also used as the feature label in the map. SourceID is required to save any new or updated features.	text	130		Yes
SourceAgency	Source agency. Owner of data.	User	Name or description of agency. Can be pre-populated by the user. For example: U. S. Geological Survey	text	130		Yes
SourceDataset	Description of source data.	User	Name or description of dataset. For example: National Water Information System	text	130		Yes
SourceFeatureURL	Unique URL to source feature data.	User	Use for a unique or general web address to your feature data on the internet. Can be pre-populated by the user. For example: https://waterdata.usgs.gov/monitoring-location/09380000/#parameterCode=00065&period=P7D	text	255		Yes
FeatureType	Type of feature or type of hydro observation.	User	Type of hydro observation. Can be pre-populated by the user. Any data type is acceptable. For example: dam, stream gage, divergence structure, hydrologic unit outlet, spring, seep, sink, rise, biologic sampling site, point source pollution, Wild and Scenic River, Waters of the United States, stretches of river for recreational rafting, dye traces in a karst landscape; algal blooms on reservoirs, or hyacinth overgrowth on reservoirs.	text	60		Yes
ReachCode	ReachCode of network address.	Populated by HydroAdd	ReachCode can be pre-populated by the user prior to running Batch QC with HydroAdd. Batch QC will use the pre-existing ReachCode for addressing if an NHD feature with a matching ReachCode is available in the search tolerance.	text	14		Yes
FromMeasure	From measure of network address.	Populated by HydroAdd	The measure is a number between zero and one-hundred--zero being downstream and one hundred being upstream. In the NHD HR model, the From Measure is always upstream--the larger measure, while the To Measure is always downstream--the smaller measure. Measure can be thought of as a "percent upstream" on a ReachCode.	double			Yes
ToMeasure	To measure of network address.	Populated by HydroAdd	The measure is a number between zero and one-hundred--zero being downstream and one hundred being upstream. In the NHD HR model, the From Measure is always upstream--the larger measure, while the To Measure is always downstream--the smaller measure. Measure can be thought of as a "percent upstream" on a ReachCode.	double			Yes
ReachSMDate	Most recent date of spatial modification of underlying NHD reached feature.	Populated by HydroAdd	ReachSMDate is a time stamp of most recent geometry edit to the feature. Pulled from NHDReachCodeMaintenance table	date			Yes
AddressDate	Date of addressing.	Populated by HydroAdd	Date of creation or most recent edit of user's addressed data.	date			Yes
FromCatchment	NHDPlus HR Catchment associated with the FromMeasure of line addressed data. The NHDPlus ID.	Populated by HydroAdd	Pulled from the most recent snapshot of NHDPlus HR catchments.	double			Yes
ToCatchment	NHDPlus HR Catchment associated with the ToMeasure of line addressed data. The NHDPlus ID.	Populated by HydroAdd	Pulled from the most recent snapshot of NHDPlus HR catchments.	double			Yes
FromHU	WBD HU12 associated with the FromMeasure of line addressed data.	Populated by HydroAdd	HU12 is populated by default. User can manually enter any HU-level up to HU16.	text	16		Yes

ToHU	WBD HU12 associated with the FromMeasure of line addressed data.	Populated by HydroAdd	HU12 is populated by default. User can manually enter any HU-level up to HU16.	text	16		Yes
OnNetwork	Indicates if an item is located on the flowline network or not.	Populated by HydroAdd	For unaddressed items, OnNetwork=No. After addressing OnNetwork=Yes.	short		NoYes Domain	No
HydroAddressID	Unique identifier. 40-digit GUID.	Populated by HydroAdd	HydroAdd creates a unique identifier for all new features. For existing features, if HydroAddressID is not already populated, HydroAdd will create a GUID when the feature is updated and saved.	text	40		Yes

HydroAdd line schema, QC fields

Point QC field name	Field Description	Source	Notes	Field type	Length	Domain	Allows Nulls
GNIS_NAME	GNIS_NAME at network address. Populated by HydroAdd tool during manual addressing or Batch QC.	Populated by HydroAdd	♦ Can be pre-populated by the user prior to running Batch QC with HydroAdd. ♦ Batch QC will use the pre-existing GNIS_NAME for addressing if an NHD feature with a matching GNIS_NAME is available in the search tolerance.	text	65		Yes
GNIS_ID	GNIS_ID at network address. An QC optional field. If the field is present in the user's data, HydroAdd will populate it during manual addressing or Batch QC.	Populated by HydroAdd	♦ Can be pre-populated by the user prior to running Batch QC with HydroAdd. ♦ Optional field	text	10		Yes
SnapTolerance	User input. SnapTolerance is a buffer around the start and end points of the input line. Start and end points will snap to an NHDFlowline feature within the SnapTolerance only if both points are in SnapTolerance.	User input	♦ Both start and end point must be in SnapTolerance for the new line to draw ♦ If no NHDFlowlines are in the SnapTolerance, then InSnapTolereance = No, InQCTolerance = No, and QCApproved = No ♦ If MaxSnap <= SnapTolerance, then InSnapTolerance = YES	double			No
FromSnapDistance	Distance in meters of the From point of the original line feature to the From point of the newly addressed line feature.	Populated by HydroAdd	From refers to the upstream end of the flowline. In the NHD HR model, the flowlines go From upstream To downstream.	double			No
ToSnapDistance	Distance in meters of the To point of the original line feature to the To point of the newly addressed line feature.	Populated by HydroAdd	To refers to the downstream end of the flowline. In the NHD HR model, the flowlines go From upstream To downstream.	double			No
MaxSnap	The greater value of either FromSnapDistance or ToSnapDistance.	Populated by HydroAdd	♦ If MaxSnap <= SnapTolerance, then InSnapTolerance = YES ♦ Both start and end point must be in SnapTolerance for the new line to draw	double			No
InSnapTolerance	Indicates if MaxSnap is within the SnapTolerance.	Populated by HydroAdd	♦ If MaxSnap <= SnapTolerance, then InSnapTolerance = YES ♦ Both start and end point must be in Snap Tolerance for the new line to draw	short	1	NoYes Domain	No
QCTolerance	User input. Maximum allowable distance in meters to approve snapped line feature. The QC tolerance is the maximum distance where the point is automatically approved.	User input	If MaxSnapDistance <= QCTolerance, then InQCTolerance = Yes	double			No
InQCTolerance	Indicates if MaxSnap is within QCTolerance	Populated by HydroAdd	♦ If no flowlines are within the SnapTolerance, then InQCTolerance = No, QCApproved = No, and InLengthChangeTolerance = No ♦ If MaxSnap <= QCTolerance, InQCTolerance = Yes	short	1	NoYes Domain	No
LengthChangeTolerance	User input. Percent length change acceptable during batch QC.	User input	If LengthChange <= LengthChangeTolerance, then InLengthChangeTolerance= Yes	double			No
LengthChange	Percent length change of new feature.	Populated by HydroAdd	Abs [length new feature - length original feature)/length original feature] * 100	double			No
InLengthChangeTolerance	Indicates if newly addressed line feature is within the LengthChangeTolerance.	Populated by HydroAdd	If LengthChange <= LengthChangeTolerance then InLengthTolerance=Yes	short	1	NoYes Domain	No
QCApproved	Indicates approval status.	Populated by HydroAdd	QCApproved = No means the user should manually QC the item in an editing queue	short	1	NoYes Domain	No

Contact

Need further help with HydroAdd? Have comments, corrections, or questions regarding the user guide?

Feel free to contact us at hydroadd@usgs.gov.

For general questions about the NHD, contact nhd@usgs.gov.

Revision history

Date	Revision
11/28/2021	Initial release